Tektronix®
COMMITTED TO EXCELLENCE

1220/1225
LOGIC ANALYZER

SERVICE MANUAL

061-3473-00
Product Group 43

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WARNING

THE FOLLOWING SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID PERSONAL INJURY, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO. REFER TO OPERATORS SAFETY SUMMARY AND SERVICE SAFETY SUMMARY PRIOR TO PERFORMING ANY SERVICE.

Printed in the U.S.A. Specification and price change priveleges are reserved.

PREFACE

This manual provides servicing information for the Tektronix 1220 and 1225 Logic Analyzers. The servicing of both machines is identical except where noted.

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LIST OF ILLUSTRATIONS

Safety Precautions

Follow these safety precautions while using this product.

Grounding the Product

This product is grounded through the grounding conductors in the interconnecting cables and power cord. To avoid electrical shock, plug the system's power cord into a properly wired receptacle. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord

Use only the power cord and connector specified for the system. Use only a power cord that is in good condition. Refer power cord and connector changes to qualified personnel.

CSA Certification includes the equipment plus those power cords appropriate for use on the North America power network. Any other power cords supplied are approved for the country of use.

Use the Proper Fuse

To avoid fire hazard, use only the fuse specified in the parts list for your product. Be sure the fuse is identical in type, voltage rating, and current rating.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an atmosphere of explosive gases unless such operation has been specifically certified.

Do Not Remove Covers or Panels

To avoid personal injury from dangerous voltages, do not remove the product covers or panels. Do not operate the product without the covers and panels properly installed.

OPERATOR'S SAFETY SUMMARY

GENERAL SAFETY INFORMATION

The general safety information in this summary is for operating and servicing personnel. Specific warnings and cautions will appear throughout the manual.

In This Manual

WARNING statements identify conditions or practices that could result in personal injury or loss of life.

CAUTION statements identify conditions or practices that could result in damage to the equipment or other property.

Marking on Equipment

DANGER indicates a personal injury hazard immediately accessible as you read the marking.

CAUTION indicates a personal injury hazard not immediately accessible as you read the marking, or a hazard to property including the equipment.

Symbols Marked On Equipment.


DANGER high voltage


Protective ground (earth) terminal


Attention - refer to manual


Susceptible to damage from static charge

SERVICE SAFETY INFORMATION

The following servicing safety information is for servicing personnel. Follow these safety precautions, along with the general safety precautions outlined earlier, while installing or servicing this product.

WARNING

Servicing and installation information is for qualified service personnel only.

Do Not Service Alone

Do not perform internal service or adjustment on this product unless another person able to give first aid and resuscitation is present.

Use Care When Servicing With Power On

To avoid personal injury from dangerous voltages, remove jewelry such as rings, watches, and other metallic objects before servicing. Do not touch the product's exposed connections and components while the power is on.

Disconnect the power before removing protective panels, soldering, or replacing components.

Power Source

The system's primary power source should not apply more than 250 volts rms between the supply conductors, or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the system's power cord is essential for safe operating of this product.

Use Caution when Servicing the CRT

The CRT assembly should be serviced only by qualified personnel familiar with CRT servicing procedures and precautions.

CRTs retain hazardous voltages for long periods of time after power-down. Before attempting any work inside the monitor, discharge the CRT by shorting the anode to chassis ground. When discharging the CRT, connect the discharge path to ground and then to anode.

Use extreme caution when handling the CRT assembly. Rough handling may cause the CRT to implode. Do not nick or scratch the glass or subject it to undue pressure during removal or installation. When handling the CRT assembly , wear safety goggles and heavy gloves for protection.

GENERAL INFORMATION

PRODUCT DESCRIPION

Both the 1220 and the 1225 Logic Analyzers include eight non-volatile setup memories, seven-inch CRT, four sets of non-volatile 2K deep sample memories, programmatic triggering capability, and two 16 channel probes (three probes with the 1225). The probes will operate in either synchronous or asynchronous sample modes with 4 channel asynchronous sampling at 100 MHz, 8 channels at 50 MHz, 8 channels with glitch detection to 25 MHz, or 16 channels sampled to 25 MHz in asynchronous or synchronous modes.

The **1220** Logic Analyzer consists of two independent 16 channel analyzers which may function separately or be linked together, a processor to control display and analysis functions, and four reference memories. The **1225** Logic Analyzer offers an additional 16 channel analyzer.

SPECIFICATIONS

The following tables contain the electrical, environmental and physical specifications for the 1220/1225 Logic Analyzers and the P6442 General Purpose Probe.

Table 1-1

ELECTRICAL SPECIFICATIONS

CHARACTERISTICS	SPECIFICATION	SUPPLEMENTAL INFORMATION
Hold	0 ns Hold	On all 16 data channels per probe +/- 1 for nscount pattern on every four data bits. Hold time synchronous clock to data rising edge to rising edge, falling edge to rising edge
Setup		20 ns
Glitches	20 ns Setup	25 MHz data - verify data path only +/- 3 ns between falling edges
Sync clock	20 MHz	26 MHz on all four syncronous clocks count pattern for every four data bits
Async clock	100 MHz	25 MHz data with 25 MHz internal clock (lower internal clocks verified in controller board test)
Ext clocks		Visual verification of acquired data when connected to bit 3 of counter during probe test.

Table 1-1 (cont.)

CHARACTERISTICS	SPECIFICATIONS	SUPPLEMENTAL INFORMATION
Qualifiers		0 +/- 1 ns hold on bit 3 of counter during probe test.
20 ns min clock pulse width	Minimum clock pulse width	Not verified
Data input threshold	TTL fixed	Fixed at 2.0 volts using HCT technology (actual level not verified)
Input voltage levels	Max -2.5V to +8.0V	0 V to 4.7 V input signal used for verification
Data 1 M 5pf other 100K 10 pf	Impedance	Not verified
2048 Memory depth		Visual verification of data only
	Dual Timebases	Verified from 25 Hz to 100 MHz
5V pulse for 1 clk period TTL compatible	Ext trigger out	Not measured - verify Trig-out can drive Trig-in
TTL input	Ext trigger-in	Not verified - verify Trig-in can be activated from Trig-out only
60000 pass count	Pass count	Verified from 1 to 8 only
Var. display intensity		Verification from low range to high range measured using light meter

Table 1-1 (cont.)

CHARACTERISTICS	SPECIFICATIONS	SUPPLEMENT INFORMATION
RS-170 Video	Video out	Verify output can drive monitor
Clock/Cal program	Set clock	Manual load with time delay and power off - power up - visual verification
Clock/Cal nonvolatile	Battery BU	Visual verification after power off condition - Battery (B1) measured
Int.Storage Memory (4)	Sample Memory	Visual verification on acquired samples. Battery (B2) measured
Int.Storage Setup (8)	Saved Setup	Visual verification - save - power down restore - verify (B2)
Line Spec	90-132 VAC 180-264 VAC 47-63 Hz	Verified at min and max DC load at Power Supply test - System only verified at 110 VAC - 60 Hz only
	Line Safety	Verified with HI-POT test
Max clock rep rate (else)	ELSE limit	Verified at <= 10 MHz
START		Verified at all level(s)
CONTIN		
STRT X		
STRT 0		
STRTX0		Verified in analyzer tests at 25 MHz
GOTO n		Levels 1 through 4 verified at 25 MHz
COMPARE		Verified at system QC - acqmem 1 to refmem 4 acqmem 2 to refmem 3

Table 1-2

ENVIRONMENTAL SPECIFICATIONS

CHARACTERISTICS	SUPPLEMENTAL INFORMATION
Temperature	Operating: 0 to 50°C Non-operating: -40 to 65°C
Altitude	Operating: sea level to 3 km (10,000 ft) Non-operating: sea level to 12 km (40,000 ft)

Table 1-3

PHYSICAL CHARACTERISTICS

CHARACTERISTICS	SUPPLEMENTAL INFORMATION
Height	18 cm (7 in)
Width	36 cm (14 in)
Depth	42 cm (15.5 in)
Weight 1220	8.4 kg (18.5 lb)
Weight 1225	8.8 kg (19.5 lb)

Table 1-4

P6442 GENERAL PURPOSE PROBE ELECTRICAL SPECIFICATIONS

CHARACTERISTICS	SPECIFICATIONS	SUPPLEMENTAL INFORMATION
Signal Input		16 Data Channels 2 Active High Clocks 2 Active Low Clocks 1 Active High Qualifier 1 Active Low Qualifier 3 Active High External Trigger Inputs 3 Active Low External Trigger Inputs
Impedance		Data Channels >1 M, 15 pf Others >100 K, <10 pf TTL Input Threshold (fixed)
Maximum Input Voltage		Static: -2.5 V to 8.0 V

ACCESSORIES

1220 Standard Accessories

1 Operators's Manual Part Number 070-6438-00
1 Power Cord
2 ea. P6442 probes
1 Test Card
2 ea. 174-0752-00 lead set (black)
2 ea. 174-0763-00 lead set (red)
2 ea. 174-0764-00 lead set (white)
48 013-0217-00 grabber tips

1225 Standard Accessories

1 Operators's Manual Part Number 070-6438-00
1 Power Cord
3 ea. P6442 probes
1 Test Card
3 ea. 174-0752-00 lead set (black)
3 ea. 174-0763-00 lead set (red)
3 ea. 174-0764-00 lead set (white)
72 013-0217-00 grabber tips

Optional Accessories

Opt A1 230V/6A 50 Hz Univ-Euro Power Cord
Opt A2 230V/6A 50 Hz UK Power Cord
Opt A3 230V/6A 50 Hz Australian Power Cord
Opt A4 * 230V/10A 60 Hz North American Power Cord
Opt A5 230V/6A 50 Hz Switzerland Power Cord
OPt 1A * 115V/10A North American Power Cord
Opt 1B North American 3-phase/8A Plug

NOTE

An asterisk (*) indicates Canadian Standards Association certification.

Opt 1D Deletes standard P6442 Probes
Opt 01 Adds RS-232 Serial Interface Port
Opt 02 Adds Parallel Printer Port

THEORY OF OPERATION

This section contains a description of the circuitry used in the 1220/1225 Logic Analyzers. The description begins with a discussion of the instrument using the block diagram in Figure 2-1. This shows the major interconnections between circuits. Each circuit board is then described.

SYSTEM BLOCK DIAGRAM DESCRIPTION

In the block diagram every block matches a board or a module. The power supply is a switch-mode type, it provides the +/-12 and +5 volts. The controller board is the top most of the stack, containing the 6502 which controls the instrument and communication through the RS232 interface option or a parallel printer board option. The next board is the video board, containing the second 6502, which produces the display on the monitor and scans the keys on the keypad.

In a **1220** there are two logic analyzer boards, the **1225** has a third logic analyzer board. They are all essentially the same, but are strapped differently. Every board is a complete logic analyzer, including login registers, word recognizer, trigger circuitry and acquisition memory.

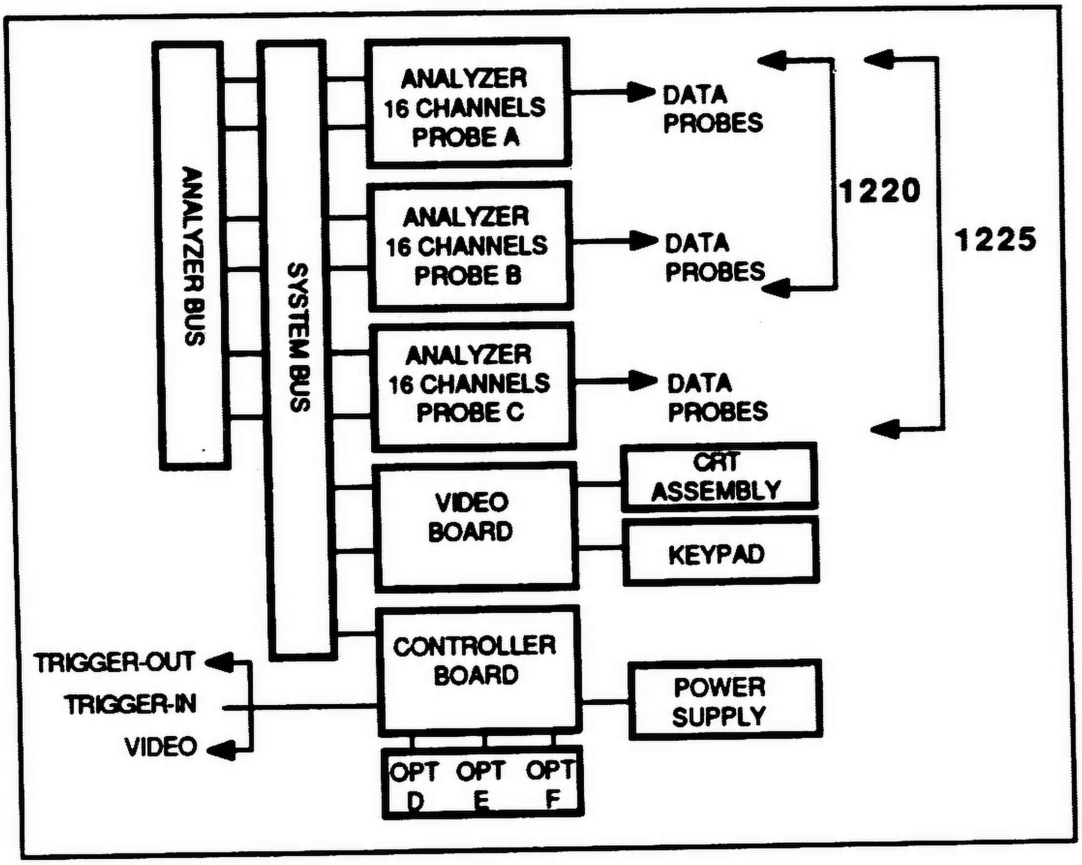


Figure 2-1. 1220/1225 Block Diagram

CONTROLLER BOARD BLOCK DIAGRAM DESCRIPTION

The following is a description of the Controller board used in the 1220/1225 Logic Analyzer. Refer to Figure 2-2 while reading the description.

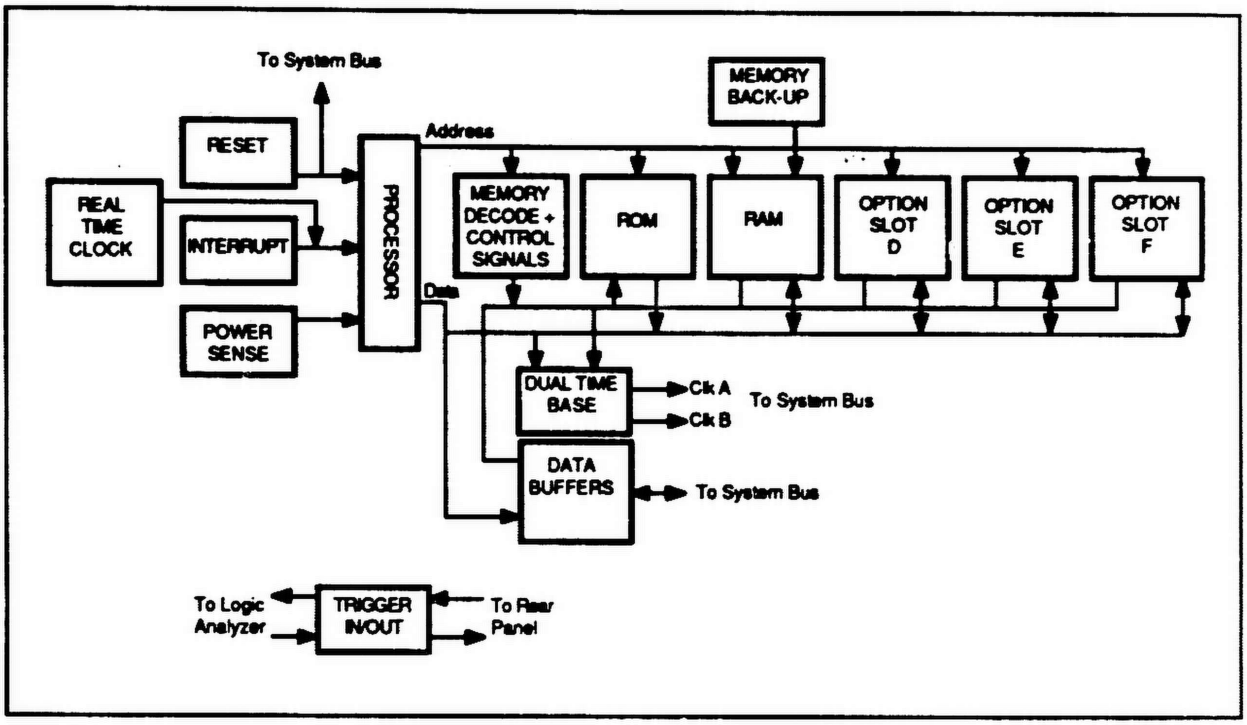


Figure 2-2. Controller Board Block Diagram

The Controller provides the computing resources and means for setting up hardware for all installed boards.

Processor

The CPU on the Controller is a 65SC02 (U33).

Interrupt

There are six interrupts. Interrupts one through four are OR-ed together at the output of U51. Interrupts one through three come from the three options slots. Interrupt four originates from U34, the programmable interval timer. Interrupt five comes from the 7170 time of day clock chip causing an interrupt once every second. The sixth is a non-maskable interrupt (NMI) generated by the power sense circuit.

Power Sense

The Power Sense circuit is a linear amplifier. Once power drops to 3.8 volts Q1 will turn on causing a NMI to be sent to the processor and to RAM.

Reset

Reset is made up of a RC network using U3 and U25. Pin 1 of U25 receives the reset signal from the keypad when the NOTES and ENTER keys are pushed at the same time.

Real Time Clock

The Real Time Clock consists of a 7170 (U8) which is backed up by a lithium battery.

Memory Decode and Control Signals

Memory decode and control signals are generated by several IC's on sheets 1 and 2 of the Controller diagrams located in Section 7: Diagrams and Circuit Board Illustrations.

Memory control is provided by U29. RAM decode by U35 and U28. And ROM decode is provided by U9.

ROM

ROM consists of two 27C256's; U17 and U30. ROM locations U18 and U31 are not used.

RAM

RAM consists of nine 4464's. U47, U48, and U49 are used with channel A. U44, U45, and U46 are used with channel B. U41, U42, and U43 are used with channel C. Available but not used are locations U38, U39, and U40.

Memory

Non-volatile memory is maintained by a lithium battery.

Data Buffers

Data is buffered by U10 before leaving the Controller board.

Dual Time Base

CLKA and CLKB produce the internal clocks for asynchronous acquisition. These clocks originate from a 25 MHz crystal controlled oscillator which is divided to produce the 10, 5, 2.5, and 1 MHz clock rates. The lower clock rates are provided by a programmable interval timer at U34.

Trigger In/Out

The Trigger In/Out block consists of BNC connectors on the rear panel that are connected to the Controller board.

Option Slots

Option slots D, E, and F provide bus access for Options 01 and 02.

Controller Memory Map

Figure 2-3 illustrates the following information.

0000-3FFF - 16K of general purpose RAM consisting of two IC's (U19 and U32). Within this range of memory is contained the current set-up, scratch data, data areas for the three option cards and the interrupt handlers.

4000-5FFF - This area addresses up to 14 8K blocks through bank switching. Each analyzer card is assigned 3 8K blocks (group D is not utilized). One each for the low and high channels and a block for status information. These blocks are divided into four 2K ranges that provide storage for memory 1, 2, 3 and 4.

6000-7FFF - This area addresses up to 3 8K ROM's that are bank switched, for option firmware. Only one option can be used at a time.

8000-FFFF - Bank switched, up to 4 32K ROM blocks. Only 2 are currently used.

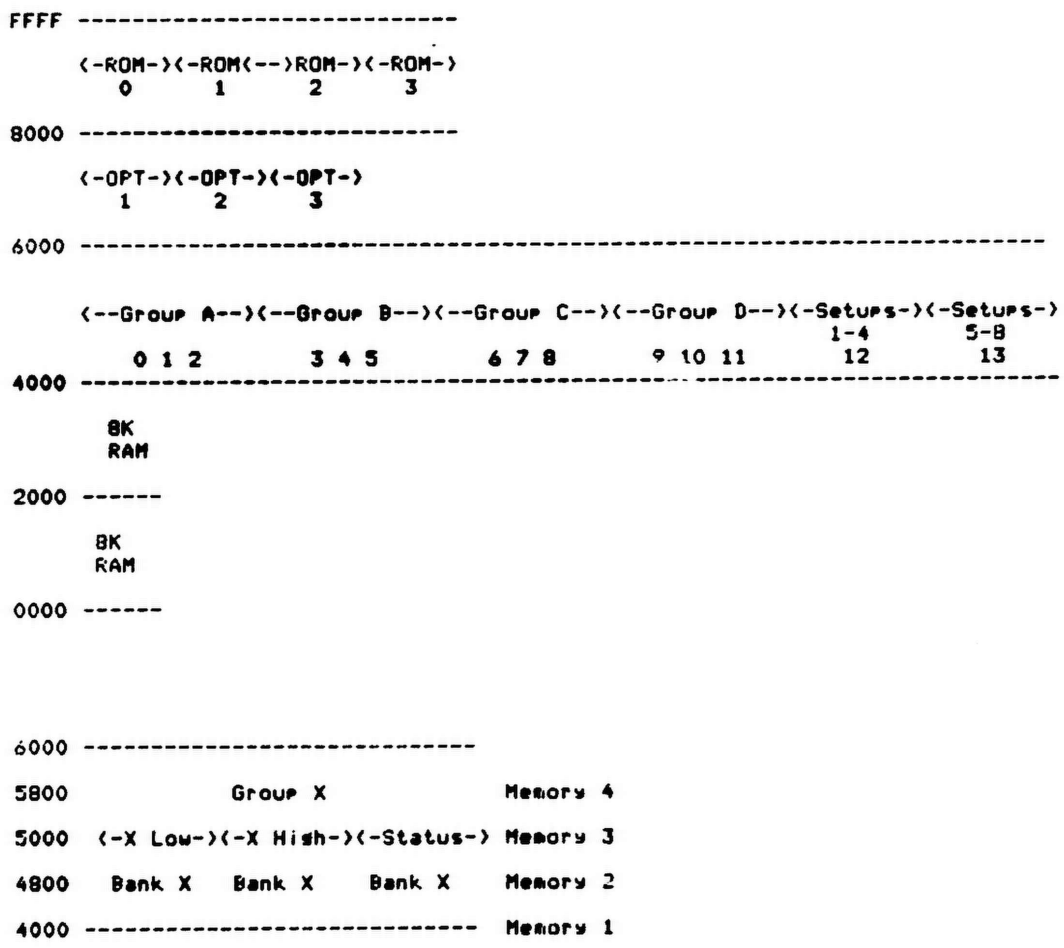


Figure 2-3. Controller Memory Map

VIDEO BOARD BLOCK DIAGRAM DESCRIPTION

The following is a block description of the Video board used in the 1220/1225 Logic Analyzer. Refer to Figure 2-3 while reading the description. Also refer to the Video board schematics in Section 7: Diagrams and Circuit Board Illustrations.

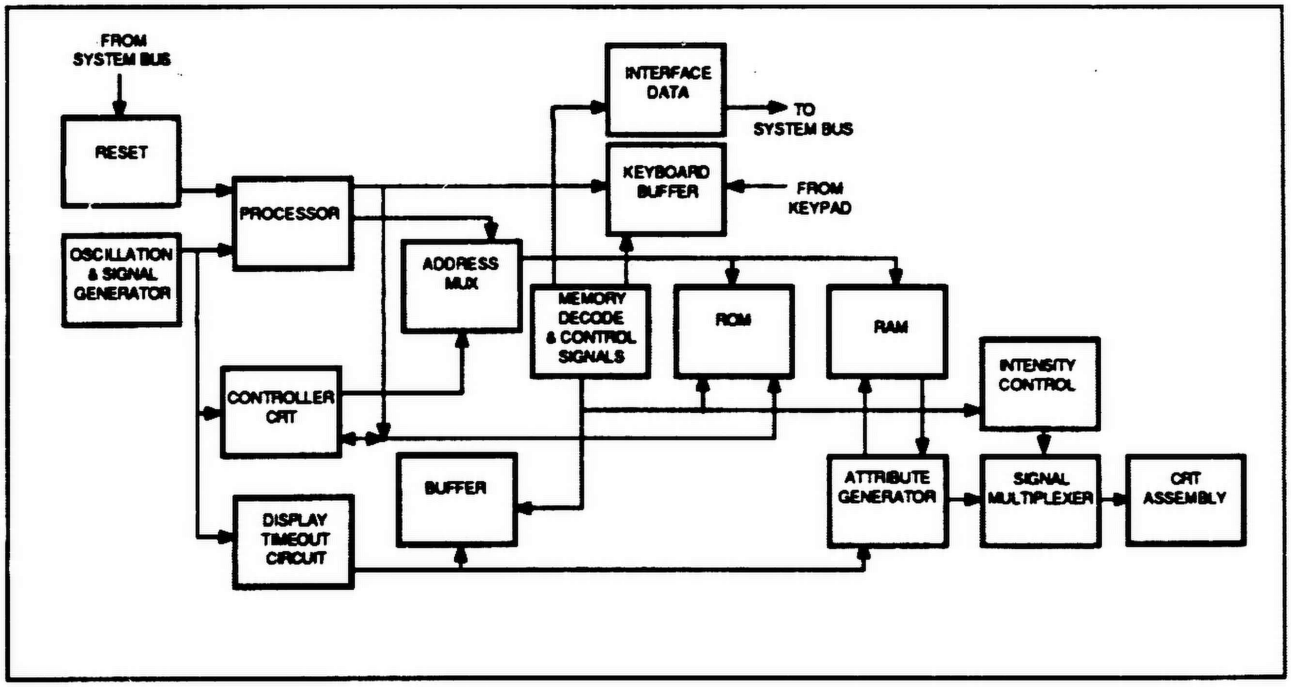


Figure 2-4. Video Board Block Diagram.

The Video board receives signals from the Keypad and transfers them to the Controller board. The Controller processes the data and sends it back to the Video board for use in the CRT Assembly board.

Processor

The processor (U41) is responsible for controlling the internal data transfer operation to and from the Video board. It is synchronized with the Controller board using the reset circuit U29. The processor transfers the keyboard information to the system data bus where the Controller processes the data and sends it back to the Video module for display.

CRT Controller

The CRT Controller (U42) provides the column and row address for the display RAMs. These column and row addresses relate to the display in form of an X-Y coordinate location for each character.

Address Mux

The Processor and the CRT Controller combine their address outputs to the Address Mux circuits U23, U24, U21, and U22. The Address Mux sends the addresses to either ROM, RAM and to Memory Decode Control Signals.

Memory Decode Control Signals

This block consists of the Memory Decoder (U26 and U28) that receives the Address Mux signals and passes it to U7 and U6. U6 and U7 provide the appropiate chip selects for ROM and RAM.

ROM and RAM

ROM (U45) provide the character fonts for the screen. RAM (U48, U47, U50, U49, U44, and U43) holds transferred data from the Controller memory. The data in these RAMs is constantly being accessed and then decoded in the Attribute Generator. The generator converts the data to serial information for display on the CRT.

Oscillator Signal Generator

This block consists of crystal oscillator Y1. It provides the master clock rate for the CRT controller and processor. It also provides the vertical and horizontal sync signals for the Video board.

Display Timeout Circuit

This circuit has a submenu function under the Utilitys Menu group. It provides the screen saver function described in the 1220/1225 Operator's Manual. The circuit is clocked by the vertical sync signal through U10 to U8. U34 provides the reset signal through U10 that allows U8 to timeout and shutoff the screen. The screen will become active when you push any key on the front panel.

Attribute Generator

This circuit receives data from RAM and consists of two sets of multiplexers (U38, U31, U39, and U20). The multiplexers take RAM data with appropriate attribute data where it is summerized and passed to U16. U16 is synchronized with the vertical, horizontal sync signals and display enable and put into open-collector logic. Open-collector logic provides analog summation of the signals for use by the CRT.

U51 receives the intensity data that is activated from the Video/Keypad submenu of the Utlity Menu group. When you change the intensity from this submenu a binary value change is presented to the input of U51. U51 bias Q2 that regulates the intensity or bias level of the summed analog siganls.

Video Board Memory Map

Figure 2-5 illustrates the following information.

0000-1FFF - This range of memory contains scratch data for the Video board.

2000-CFFF - This range of memory contains transferred memory from the Controller board. This memory is split up into 3 planes or screens. The A screen contains the data displays. The B screen contains notes, cursors and windows. The attribute screen contains the information required to mix the two screens for the proper display.

During the Video phase information is sampled from each screen and displayed.

E000-FFFF - ROM

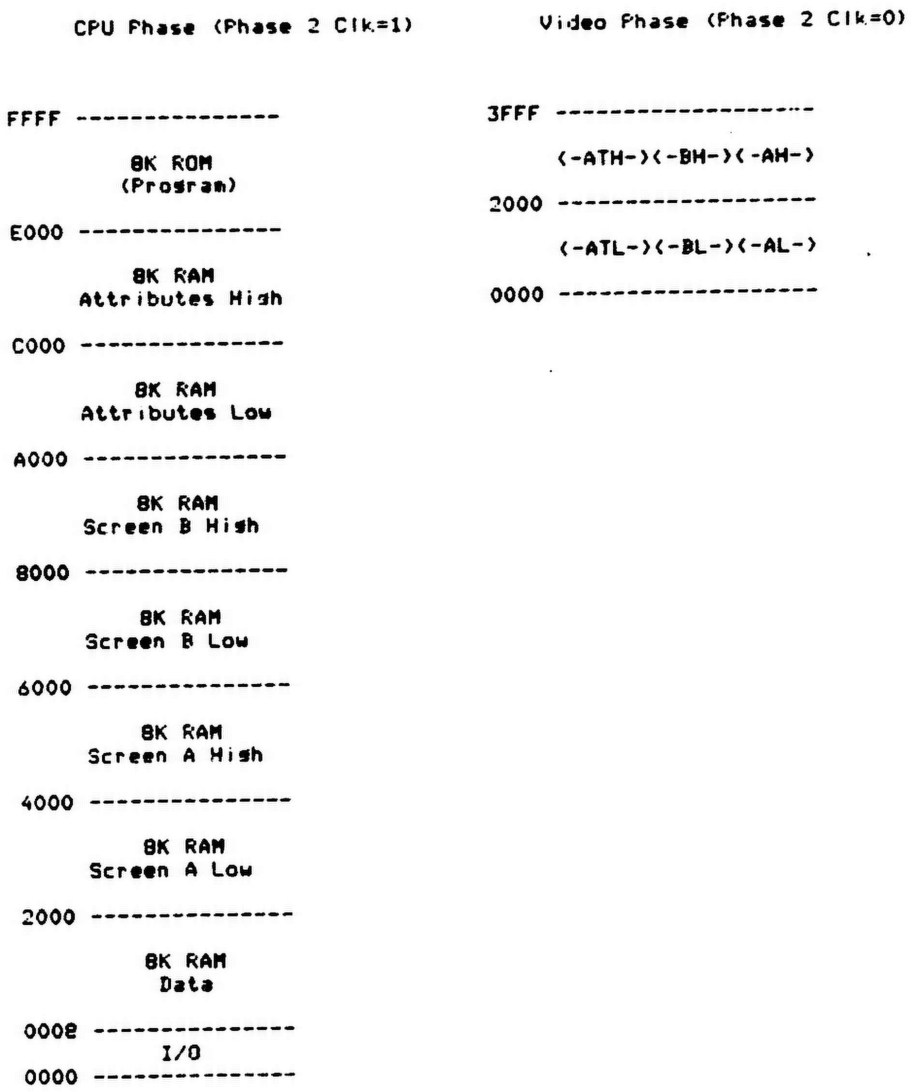


Figure 2-5. Video Board Memory Map

ANALYZER BOARD BLOCK DIAGRAM DESCRIPTION

The following is a description of the Analyzer board. Refer to Figure 2-4 while reading the description.

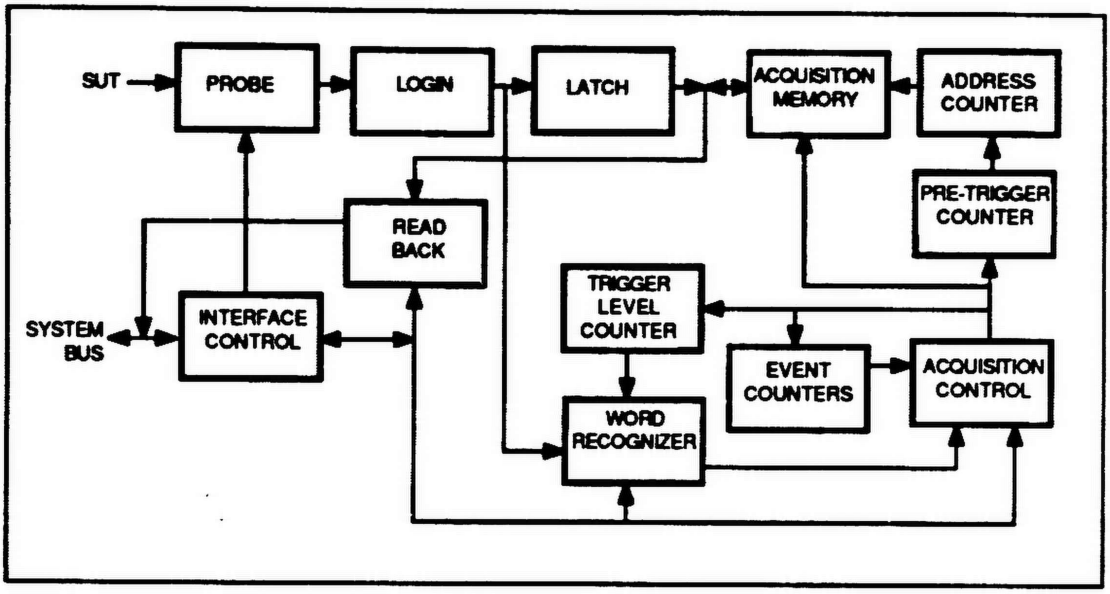


Figure 2-6. Analyzer Board Block Diagram.

The Analyzer board receives data from the probe and stores it in Acquisition Memory. Data is held in memory until full. At this time all of the memory is tranferred to the Controller board for comparison and/or display.

Login

The Login circuitry consists of eight eight-bit control latches U94, U95, U93, U97, U77, U78, U74, and U75. Data coming into the Login block is synchronized with the probe clock (PODCLK and PODCLK1). If the system is running below 10 MHz only U77, U78, U94, and U95 are used. If above 10 MHz then all eight latches are used. Data is held within these latches until it is synchronized with the system clock and is passed to the Latch and Word Recognizer blocks.

Latch

The Latch circuitry consist of U76, U98, U79 and U76. This block holds the data at the Acquisition Memory until called for by the Controller board.

Word Recognizer

The Word Recognizer circuits are located on sheets 3, 4, 5, and 6 of the Analyzer schematics in Section 7: Diagrams and Circuit Board Illustrations.

Data is passed to the Latch block and the Word Recognizer block at the same time. Depending on the results of the word recognized and how it is programed, the information will do one of two things; it will pass into Acquisition Memory or be thrown away. The determining factor on what this block will do is determined in the Acquisition Control block.

Acquisition Control

Acquisition Control circuitry is located on sheets 7 and 8 of the Analyzer schematics in Section 7: Diagrams and Circuit Board Illustrations.

Acquisition Control contains RAM programed from the Trigger Spec menu. The RAM is a 2K X 8 of which only the first twelve locations are used. These locations are programed by 8 bits to determine what mode the state machine of the Word Recognizer will be in for each level of the Trigger Spec Menu.

Events Counter

Events Counter circuitry is located on sheet 9 of the Analyzer schematics in Section 7: Diagrams and Circuit Board Illustrations.

The Events Counter is programed the same time as the Acquisition Control. The Events Counter identifies how many times a condition or a clock cycle will occur before control will be passed to the next level of acquisition control. Maximum count is 6,000.

Trigger Level Counter

Trigger Level Counters U64 and U85 determine what level of the Trigger Spec menu is currently operating. This counter is also multiplexed with a RAM which allows an identification of the Pre-Trigger Count.

When a condition is complete in a level of the Trigger Spec menu, a clock cycle will increment the counters. Then the address to the Word Recognizer RAMs, Event Counter RAMS and Acquisition Control RAMs will change to the next address level and present their outputs to the devices they program.

Address Counters

Address Counters circuits are located on sheet 8 of the Analyzer schematics in Section 7: Diagrams and Circuit Board Illustrations.

The Address Counters (U4 ,U34, U57, U27, U63, and U20) provide an address counting function for the Acquisition Memory. This is controlled from the Acquisition Control circuitry and determines whether to provide clocks on every clock cycle or on qualified data.

Read Back

Read Back circuitry is located on sheet 2 of the Analyzer schematics in Section 7: Diagrams and Circuit Board Illustrations.

Once Acquisition Memory is full the Controller board tranfers the data to itself through the Read Back circuit. The Controller stores data for comparison and/or display.

TRAINING/TEST CARD

The Training/Test Card was designed primarily as an educational tool that can be used in the study of logic analyzers, pattern generators, and oscillosopes. One of these cards is included with each 1220/1225 Logic Analyzer that is shipped from Tektronix, as a training aid for the customer. The card also serves as a test tool for the customer to use from time to time to check the performance of the analyzer, and serves as the standard unit under test and point of focus when the factory is called for engineering support questions and explanations. The card is an inhouse design that generates a substantial variety for logic level signals, but at low cost. The card is made up of five high speed CMOS integrated circuits, some discrete components, a power switch and a battery. There is a connector for easy connection of probe leads. The circuit generates sample signals (including glitches) for use in state and timing demonstrations of logic analyzers and oscilloscopes. It may also be used in the classroom study of general logic circuits as a driving source oscillator and pattern generator. Some of the output signals change at the same time (synchronously), and others have distinct delay paths for study of logic gate delay and other asynchronous parameters. Some of the signals have glitches (spikes) inserted at predetermined points.

THEORY OF OPERATION

Refer to the schematic and timing chart. The schematic and timing chart have been oriented with the output signal BIT0 at the top and the other bits below it in order. This is the typical order in which the bits will be viewed on a logic analyzer screen in timing mode. The GLITCH signal follows below the 24 data bits, then the clock signal at the bottom for reference. The timing chart represents the way the signals look and line up with each other. Actually, some of the signals do not line up exactly due to normal gate delays. These delays become apparant when a given area is expanded, by sampling at a much higher frequency. A typical asynchronous sampling frequency of one megahertz is sufficient to capture the data for timing display. This is roughly five or ten times the oscillator rate. For synchronous sampling the clock on the board would be used as the sampling clock. This clock is a buffered version of the oscillator and is connected to all three clock pins.

POWER SOURCE

The power source for the card is a 3 volt, 90 to 150 MAH lithium battery, B1. The battery is connected to the circuit via a slide switch, S1. There are three high frequency bypass capacitors between the switched side of the power bus and ground. They are C1, C2, and C3 and are physically placed for best effect. The components of the power source are not shown on the schematic. This is also true of the IC power and ground pins. All of the IC's are CMOS and require very little power to operate. However,

if the IC's are driving relatively low impedance loads, the power consumption goes up substantially. The battery will last for many hours if only high impedance loads (or no loads) are being driven. Gate delays throughout the card go up as the battery voltage goes down. This is normal with CMOS circuits. The outputs of the circuits will swing between near ground level and near the battery voltage. The outputs will remain TTL logic level compatible until the battery drops to nearly 2 volts. Lower voltage will lower the oscillator frequency and will affect the glitch generator circuit.

OSCILLATOR

The onboard oscillator is made up of gates U3F, U3E, R1 and C5. This is one of several common CMOS oscillator circuits. The oscillator frequency is primarily determined by the time constant due to R1 and C5, and is affected and upper limited by the gate delays of the two inverters. The oscillator is buffered by inverter gate U3D before it goes to U1 and U5 and again by U3C before it drives the CLK pins. Note that all three clock pins are connected to the same point and are identical. U1 and U5 use active high clocks, so the clocks coming off the card can be considered active low. In reality, when these clocks are used as synchronous clocks to an analyzer, either clock edge can be the active edge. The 24 data bits are valid during both edges. The falling clock edge will capture data just before it changes, and the rising edge will capture data a while after it has changed. The oscillator frequency is roughly 100 to 200 kHz.

DATA BITS PATTERN GENERATION

The synchoronous counter U5 generates the first four bits BIT0 through BIT3. These bits change state at the same time following the clock. They count in a simple 4-bit binary order with BIT3 being the high order bit. They count from 0 to 15 and repeat. There are 16 states to the bit pattern across the whole card which are based on and synchronized to the 16 states of the 4 bits from U5. States zero through fifteen will again be referenced below. The Ripple Carry output from U5 (pin 15) is active during state fifteen when all of the counter bits are logical high. This signal comes off the card as BIT8. U4F inverts this bit to create BIT10. The preset loading inputs of U5 are active signals which come from U1, but they do not affect the operation of U5 since the active low load input to U5 (pin 9) is tied high. The preset inputs are tied to active signals in order to create more active points where clips and probe leads may be connected; the card may be used as a source for more than just 24 data bits.

The Carry bit from U5 is also used to create a glitch at the trailing edge of the pulse when state 15 is changing to state 0. R2 and C4 form a differentiator (spike generator). When the voltage on U5 pin 15 falls, the voltage at C4 pin 1 also falls momentarily. C4 charges quickly, and the voltage at C4 pin 1

again rises creating a spike (glitch) with its width being due to the time constant of C4 and R2, and gate input characteristics. This active low spike is inverted by U3A and drives the GLITCH pin. It also serves as the synchronizing signal for U1 by driving its reset pin. GLITCH is an active high signal that occurs at the beginning of every state 0. The glitch width is about 60 nanoseconds at the output pin. The glitch circuit is also connected to one input (pin 5) of U2B. But the glitch does not appear on the output of U2B. The output (BIT14) is a slightly delayed and inverted version of BIT2. BIT15 is the NAND combination of BIT0 and BIT1. BIT14 and BIT15 are NANDed by U2C to create BIT13. BIT13 and BIT15 were created combinationally from signals that change very close to the same time. Combinational mixing of signals that do not occur at the same time creates the possible generation of a glitch. But in the cases above the amount of time separation between the inputs is less than the gate delay of the NAND gates, so glitches are not generated. This is not the case with BIT12 (and BIT9). U2C adds extra delay to BIT13 and separates it in time from BITs 14 and 15. U2C mixes BIT15 with BIT13 to form BIT12. Because of the time separation of the signals BIT12 will contain glitches. The glitches occur at state 0 and at state 8. They are logically low going and are about 10 nanoseconds wide. BIT12 is inverted by U3B to form BIT9. BIT9 will also contain glitches at states 0 and 8. This time the glitches are logical high going and are also about 10 ns wide.

The shift register U1 creates 8 bits, BIT16 through BIT23. It is synchronized by the glitch circuit so that the bit states will repeat predictably. U1 pin 13 (BIT23) drives inverter U4D to create BIT7 which in turn feeds back as the input information to U1 which gets clocked in. The outputs from U1 (BITs 16 to 23) "walk by" one after the other. The outputs are synchronous and change states at the same time following the clock. These bits are also closely synchronous with BITs 0 to 3. Other signals on the card are not synchronous and have various delays between one another and the synchronous bits. These delay differences can be viewed with an oscilloscope or with a logic analyzer in timing mode at a relatively fast sample rate. The GLITCH signal is wide enough to easily be captured by a logic analyzer in normal mode, or at a relatively slow sample rate by turning on the glitch detector. The glitches on BIT13 and BIT9 are very narrow and require the glitch detector.

MAINTENANCE

OVERVIEW

This section contains information for performing preventive maintenance, disassembly/reassembly, troubleshooting, and corrective maintenance procedure.

PREVENTIVE MAINTENANCE

Preventive maintenance consists of cleaning and visual inspection. Preventive maintenance performed on a regular basis may prevent instrument breakdown and will improve the reliability of the instrument. The severity of the environment to which the instrument is subjected determines the frequency of maintenance. A convenient time to perform preventive maintenance is preceding adjustment of the instrument.

CLEANING

The instrument should be cleaned as often as operating conditions require. Accumulation of dirt on components acts as an insulating blanket and prevents efficient heat dissipation which can cause overheating and component breakdown.

CAUTION

Avoid the use of chemical cleaning agents which might damage the plastics used in this instrument. In particular, avoid chemicals that contain benzene, toluene, xylene, acetone, or similar solvents.

Exterior

Loose dust accumulated on the front panel can be removed with a soft cloth or small brush. Dirt that remains can be removed with a soft cloth dampened with a 5% detergent and water solution. Abrasive cleaners should not be used.

Interior

Dust in the interior of the instrument should be removed occasionally due to its electrical conductivity and high humidity conditions. The best way to clean the interior is to blow off the accumulated dust with dry, low-pressure air.

If a liquid must be used for minor internal cleaning, use isopropyl alcohol, denatured ethyl alcohol, or a solution of 1% mild detergent and 99% de-ionized water.

INSPECTION

The instrument should be inspected occasionally for such defects as broken connections, improperly seated semiconductors, damaged circuit boards, and heat-damaged parts.

Particular care must be taken if heat-damaged components are found. Overheating usually indicates other trouble in the instrument; therefore, it is important that the cause of overheating be corrected to prevent recurrence of the damage.

DISASSEMBLY/REASSEMBLY INSTRUCTIONS

OVERVIEW

This section describes the disassembly and reassembly procedures for the 1220/1225 mainframe.

In the following procedures, directional terms (top, bottom, left, right, front, and back) are based on the assumption that your mainframe is in a normal, upright position (bottom down), and that you are facing the front of the instrument. Reassembly procedures are the reverse of the disassembly procedures, unless otherwise noted.

Refer to Section 7: Replaceable Mechanical Parts for a detailed exploded view and parts list for the Logic Analyzer.

GENERAL PRECAUTIONS

The following precautions should be observed when performing any disassembly/reassembly procedures.

WARNING

To avoid personal injury from dangerous voltages, disconnect power source. DO NOT attempt any disassembly procedure with the instrument on or with the power cord connected.

TOOLS REQUIRED

(1) 3/16-inch nutdriver
(1) 1/4-inch nutdriver
(1) small Phillips screwdriver

DISASSEMBLY/REASSEMBLY OF MAINFRAMES

The following procedures instruct you on how to disassemble and reassemble the 1220/1225 Mainframe.

PROCEDURE # 1: TOP COVER REMOVAL

To install or remove a board, you must first remove the mainframe's top cover.

To remove the top cover, remove four screws from the side panels, two on the left and right upper sides of the cover. Lift the cover up and set aside.

CAUTION

Static discharge can damage any semiconductor in this instrument. Damage to electrical components may not be immediately apparent. Take standard anti-static precautions.

PROCEDURE # 2: REMOVAL OF CARDSTACK

1. Perform procedure #1.

2. To remove the cardstack stand mainframe on it's back feet.

3. With bottom exposed remove the four screws located under the cardstack. Keep the cardstack stable by holding on to it.

4. Return the mainframe to the normal position.

CAUTION

While holding on to the cardstack, carefully disconnect connectors by rocking them back and forth to minimize stress.

5. Disconnect any option card cables.

   Disconnect connector J2 going to the BNC connectors on the back panel.
   Disconnect the power-supply connector J3.
   Disconnect the video connector J3 on the video board.
   Disconnect the keypad connector J1.

6. Tilt the cardstack towards the back of the mainframe and remove the cables from the analyzer boards (J4).

7. Individual boards can be accessed by removal of the standoff posts that hold the cardstack together.

PROCEDURE # 3: REMOVAL OF CRT ASSEMBLY

WARNING

CRTs retain hazardous voltages for long periods of time after power-down. The CRT assembly should be removed only by qualified service personnel familiar with CRT servicing procedures and precautions.

Use extreme caution when handling the CRT assembly. Do not nick or scratch the glass or subject it to undue pressure during removal or installation. Rough handling may cause it to violently implode. When handling the CRT assembly, wear safety goggles and heavy gloves for protection.

1. Perform procedure #1.
2. Remove two screws each on the right and left side of the bottom panel.
3. Stand mainframe on back feet.
4. With the bottom exposed remcve the remaining six screws from the bottom panel.
5. Remove two screws each from the top and bottom of the frame.
6. While holding on to the CRT, return the mainframe back to its normal position.
7. Remove the four screws from the metal plate under the CRT board and remove the CRT unit.

PROCEDURE # 4: REMOVAL OF KEYPAD

1. Perform procedure #1, #2 and #3 with the exception of step #7 in procedure #3..

2. Remove the four nuts from the back of the Keypad board.

3. Turn the CRT aside and remove Keypad board.

PROCEDURE # 5: REMOVAL OF POWER SUPPLY

1. Perform procedure #1.

2. Remove the four nuts from the power supply shield.

3. Remove the shield.

4. Disconnect the following four connector cables on the power supply.

   Line select
   Line power
   Ground
   Controller board cable

CAUTION

When re-installing the Controller board cable make sure the cable is properly aligned. If the connectors are offset the power supply may be damaged.

5. Unscrew the spacer posts and remove the power supply.

TROUBLESHOOTING

The following information is provided to help troubleshoot the 1220/1225 Logic Analyzer. Information contained in other sections of the manual should be used along with the following information to aid in locating the defective component. An understanding of the circuit operation is very helpful in locating troubles, particularly where integrated circuits are used.

TROUBLESHOOTING EQUIPMENT

The following equipment, in addition to that listed in Section 4: Verification and Adjustment, is useful for troubleshooting the 1220/1225 Logic Analyzers.

Digital Multi-Meter (DMM)

Purpose: Check Voltage and resistance.

Test Oscilloscope

Greater than 10 Mhz Oscilloscope. Tektronix 4665 or better.

Purpose: Check operating waveforms.

Plug-In Extender

Purpose: Connects and extends Analyzer boards from the Video and Controller board for troubleshooting.

CALIBRATION/TEST FIXTURE

Part Number: 067-1340-99.

TROUBLESHOOTING TECHNIQUES

Troubleshooting Procedure

These troubleshooting procedures are used to eliminate the simple error before proceeding with extensive troubleshooting. The first few checks ensure proper connection, operation, and adjustment. If the trouble is not located by these checks, the remaining steps aid in locating the defective component. When the defective component is located, it should be replaced using the replacement procedures listed under Corrective Maintenance in this section.

1. CHECK CONTROL SETTINGS

Incorrect control settings can indicate a trouble that does not exist. If there are any questions about the function or operation of controls, refer to the 1220/1225 Operator's Manual.

2. CHECK ASSOCIATED EQUIPMENT

Before proceeding with troubleshooting, check that the equipment used with this instrument is operating correctly. Check that the signal is properly connected and the interconnecting cables are not defective. Also check the power source.

3. VISUAL CHECK

Visually check the portion of the instrument in which the trouble is located. Many troubles can be located by visible indications such as unsoldered connections, broken wires, damaged circuit boards, and damaged components.

4. CHECK INSTRUMENT ADJUSTMENT

Check the adjustment of this instrument, or the affected circuit if the trouble appears in one circuit. The apparent trouble may only be a result of misadjustment. Complete adjustment instructions are given in Section 4: Verification and Adjustment.

5. ISOLATE TROUBLE TO A CIRCUIT

To isolate trouble to a circuit, note the trouble symptom. The symptom often identifies the circuit in which the trouble is located. When trouble symptoms appear in more than one circuit, check the affected circuit by taking voltage and waveform readings. Also Check for the correct output signals at the front-panel connectors with the test oscilloscope. Incorrect operation of all circuits often indicates trouble in the power supply. Check for correct voltages of the individual supplies. A defective component elsewhere in the instrument can appear as a power-supply trouble and may also affect the operation of other circuits.

6. REPAIR

If any defective parts are located, follow the replacement procedures given in Corrective Maintenance. Be sure to check the performance of any circuit that has been repaired or had any electrical components replaced.

CAUTION

To avoid equipment damage, disconnect the power source before performing the cable continuity check.

CORRECTIVE MAINTENANCE

Corrective maintenance consists of component replacement and instrument repair. Special techniques required to replace components in this instrument are given here.

OBTAINING REPLACEMENT PARTS

All electrical and mechanical part replacements can be obtained through Tektronix Field Office or representative. However, many of the standard electronic components can be obtained locally in less time than is required to order them from Tektronix Inc. Before purchasing or ordering replacement parts, check the parts list for value, tolerance, rating, and description.

NOTE:

When selecting replacement parts, it is important to remember that the physical size and shape of a component may effect its performance in the instrument, particularly at high frequencies. All parts should be direct replacements unless it is known that a different component will not adversely affect instrument performance.

Some parts are manufactured or selected by Tektronix Inc. to satisfy particular requirements, or are manufactured for Tektronix Inc. to our specifications. To determine the manufacturer of parts, refer to parts list, Cross Index Mfg. Code Number to Manufacturer.

When ordering replacement parts from Tektronix Inc. include the following information:

1. Instrument type
2. Instrument serial number
3. A description of the part (if electrical, include circuit number)
4. Tektronix part number

WARNING

To avoid electrical shock, disconnect the instrument from the power source before soldering.

SOLDERING TECHNIQUES

The reliability and accuracy of this instrument can be maintained only if proper soldering techniques are used when repairing or replacing parts. General soldering techniques, which apply to maintenance of any precision electronic equipment, should be used when working on this instrument. Use only 60/40 rosin-core, electronic-grade solder. The choice of soldering iron is determined by the repair to be made. When soldering on circuit boards, use a 15- to 25-watt pencil-type soldering iron with a 1/8-inch wide wedge-shaped tip. Keep the tip properly tinned for best heat transfer to the solder joint. A higher wattage soldering iron may separate the wiring from the base material. Avoid excessive heat; apply only enough heat to remove the component or to make a good solder joint. Also, apply only enough solder to make a firm solder joint.

CAUTION

Some of the ciruit boards in this instrument are multilayer type boards with a conductive path(s) laminated between the top and bottom board layers. All soldering on these boards should be done with extreme care to prevent breaking the connections to the center conductor(s); only experienced maintenance personnel should attempt repair of these boards.

For metal terminals, (e.g., coaxial connector ground lug, etc.) a higher wattage-rating soldering iron may be required. Match the soldering iron to the work being done. For example, if the component is connected to the chassis or other large heat-radiating surface, it will require a 40-watt or larger soldering iron.

COMPONENT REMOVAL AND REPLACEMENT

WARNING

To avoid electrical shock, disconnect the instrument from the power source before replacing components.

The exploded-view drawing associated with the Replaceable Mechanical Parts list may be helpful in the removal or disassembly of individual components or subassemblies. Component locations and circuit board locations are shown in the Diagrams and Circuit Board Illustrations section.

Changing the System Batteries

Two 3V lithium batteries reside inside the 1220/1225 Logic Analyzer. One controls the time/date setting and the other provides non-volatile storage for eight setups and four memory samples. Both of these batteries should last for several years. If you do receive invalid data from the battery-controlled fields, you should replace the batteries.

Lithium batteries require special considerations for handling and disposal.

WARNING

To avoid personal injury, observe proper procedures for handling and disposal of lithium batteries. Improper handling may cause fire, explosion, or severe burns. Do not recharge, crush, disassemble, heat the battery above 100 degrees Celcius, incinerate, or expose contents of the battery to water. Dispose of battery in accordance with local, state, and national regulations.

Typically, small quantities of batteries (less than 20) can be safely disposed of with ordinary garbage in a sanitary landfill. Larger quantities must be sent by surface transport to a Hazardous Waste Disposal Facility. The batteries should be individually packaged to prevent shorting and packed in a sturdy container that is clearly labeled "Lithium Batteries -- DO NOT OPEN."

VERIFICATION AND ADJUSTMENT

This section of the manual provides verification and adjustment procedures for the 1220/1225 Logic Analyzer. It also contains procedures for Options 01 and 02, and procedures for the Test Card. The procedures are divided into two subsections, Verification and Adjustment.

The following is a list of test equipment needed to perform these procedures.

EQUIPMENT LIST

Qty	Description
1	0-264V Variac
1	DM501A DVM or Equiv.
1	>= 100 MHz Dual Channel Oscilloscope with 2 100 MHz probes
1	External video monitor
1	020-1596-99 1220/1225 Series Service Maintenance Kit
1	067-1235-00 Power Supply
1	Printer EPSON or equivalent
1	Centronix Cable for printer
1	Tektonix 4051 or 4052
1	RS232 cable for 4051 or 4052

VERIFICATION

POWER SUPPLY VERIFICATION/ADJUSTMENT

PREPARATION

1. Refer to the Disassembly Instructions in Section 3: Maintenance, and remove the top cover of the 1220/1225.
2. Ensure the Variac is turned "OFF".
3. Connect the Variac to the power line.
4. Turn on the Variac and adjust the output to 115 VAC (line voltage).

CAUTION

Do not power up the 1220/1225 with the Variac set below 85 volts. This could damage the supply.

5. Plug in the 1220/1225 Mainframe to the Variac and power up.

REGULATION TEST

NOTE

The supplies tested below may be accessed on the Controller board at the top of connecter J3. J3 is located at the left rear corner of the Controller board with pin 1 towards the front of the instrument.

1. Set the digital voltmeter (DVM) to the 20 volt (DC) range. Connect the black lead to J3 pin 6 and the red lead to J3 pin 9.
2. Verify the DVM reads between 4.98 and 5.02 VDC. If the reading is out of tolerance adjust R21 on the power supply for a reading of 5.00 VDC. R21 is accessible through an opening on the front of the power supply cover.
3. Adjust the Variac to 90 VAC. Verify -4.850 to +5.150 VDC at pins 8, 9 and 10 of J3. Adjust oscilloscope and check that output noise and ripple does not exceed 1% pk-pk (50 mV) of output voltage.
4. Verify +11.400 to +12.600 VDC at pins 3 and 4 of J3. Adjust oscilloscope and check that output noise and ripple does not exceed 1% pk-pk (110-125 mV) of output voltage.

5. Verify -10.800 to -13.200 VDC at pins 1 and 2 of J3. Adjust oscilloscope and check that output noise and ripple does not exceed 1% pk-pk (110-130 mV) of output voltage.

6. Adjust the Variac to 132 VAC. Verify +4.850 to +5.150 VDC at pins 8, 9 and 10 of J3. Adjust oscilloscope and check that output noise and ripple does not exceed 1% pk-pk (48-51 mV) of output voltage.

7. Verify +11.400 to +12.600 VDC at pins 3 and 4 of J3. Adjust oscilloscope and check that output noise and ripple does not exceed 1% pk-pk (110-125 mV) of output voltage.

8. Verify -10.800 to -13.200 VDC at pins 1 and 2 of J3. Adjust oscilloscope and check that output noise and ripple does not exceed 1% pk-pk (110-130 mV) of output voltage.

CRT DISPLAY ASSEMBLY VERIFICATION

EQUIPMENT SETUPS AND CONNECTIONS

Display Assembly Setup

1 Turn the power switch to **ON** on the 1220/1225 Mainframe and verify the power up display appears within 30 seconds.

2 Allow the 1220/1225 three minutes to warm up before continuing with this procedure. Failure to allow the appropriate warmup time may result in re-alignment of the display at a later time.

3 Install the Picture Grid Alignment Fixture (PGAF) onto the face of the CRT.

4 Select the Timing Display (press **MENU** key, **7** key).

VERIFICATION

Display Brightness and Contrast Verification

1 If there is no timing diagram displayed press the **F** key followed by the **4** or **5** key. This selects which probe page to display.

2 Select the **VIDEO/KEYPAD** menu (press **MENU** key followed by **C**).

3 Using the right arrow key set the intensity control to the far right on the display. This is H (full) intensity. Verify raster lines cannot be seen.

4 Using the left arrow key verify the timing display can just be seen when the intensity control is to the far left on the display. This is L (low) intensity.

5 Leave the intensity indicator under the **e** of the word "intensity" in the display header.

DISPLAY POSITION VERIFICATION

Verify that the width, height and horizontal position of the display falls within the limits set by the PGAF.

KEYPAD/VIDEO/CONTROLLER BOARD VERIFICATION

Power-Up Check

1. Power up the 1220/1225 by pushing the power switch at the rear of the instrument to the **ON** position.

NOTE

If the 1220/1225 is already on, turn it **OFF** then wait for five seconds before turning it back to **ON**. This will allow the 1220/1225 to load the default conditions.

2. Verify the L.E.D. on the front panel is illuminated.

3. Verify the power up display appears within 30 seconds.

Keypad Button Check

1. Press the **MENU** key then the **3** key. Verify the **CONDITIONS** menu appears.

2. Move the cursor up and down in the symbol column with the up arrow and down arrow cursor keys. Verify the cursor moves up and down each time the keys are pressed.

3. Press the **ENTER** key. Verify the cursor moves to the right side of the display (Word field).

4. Move the cursor to the left and right with the left arrow and right arrow keys. Verify the cursor moves left and right each time the keys are pressed.

5. Move the cursor back to the beginning of the Word field. Press the **0** through **9** and **A** through **F** keys while verifying the characters appear on the display in the order pressed.

6. Press the **DON'T CARE** key. Verify an **X** appears where the cursor is located.

NOTE

The next step verifies the auto repeat function of the keyboard.

7. Move the cursor to the 0 position by pressing the **ENTER** key twice. Press and hold the down arrow key until all of the characters entered are deleted.

8. Press the **ENTER** and **NOTES** keys at the same time. Verify the display goes blank and then re-appears with the **Power Up** menu.

9. Press the **START** key to display the **Operation Categories** menu. Press the **START** key again, then the **STOP** key. Verify that the system attempts to start an acquisition by momentarily displaying **<Initializing>** followed by **<Acquisition Aborted>**.

Screen Display Check

The following procedure verifies that all menus can be accessed from the keypad.

1. Press the **NOTES** key twice. Check that the display shows the on-line manual.

2. Press the **MENU** key. Check that the **Operation Categories** menu is displayed.

3. Using the arrow keys, select the **Memory Configuration** menu.

4. Press the **ENTER** key and check that the **Memory Configuration** menu is error free.

5. Repeat steps 2 through 4 for each of the remaining menu selections (1-8 and A-F).

NOTE

The **Disassembly** (menu 6) will only appear if a PM probe is installed. Likewise the Option menus (menus D, E and F) will only appear if an option is installed.

Video Out Check

a. Connect the external monitor video cable to the 1220/1225 external video out connector on the rear panel.

b. Verify the picture is stable and has normal intensity.

c. Remove the external monitor video cable from the 1220/1225.

ANALYZER BOARD VERIFICATION

EQUIPMENT SETUPS AND CONNECTIONS

NOTE

Before proceeding insure all power is **OFF** to all fixtures. Always turn **ON** the 1220/1225 first, then any external equipment second. Always turn **OFF** the external equipment first and the 1220/1225 last.

Refer to Figure 4-1 for the equipment setup.

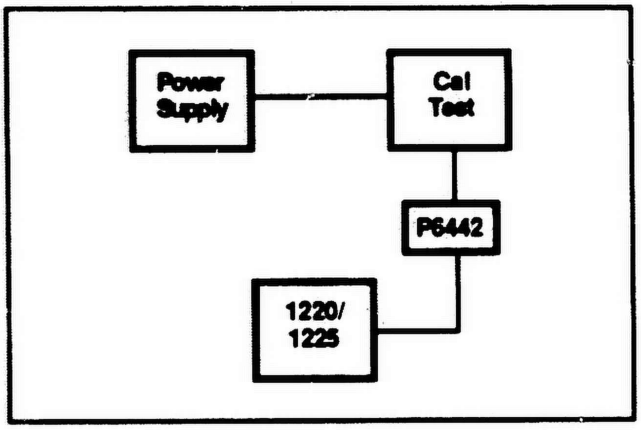


Figure 4-1. Analyzer board verification equipment setup.

Connect the 067-1340-99 Calibration/Test Fixture as follows:

Banana jacks to +5 V and ground
FAN to 12 VDC and ground
D0 - D7, D8 - D15, leads to Acquisition probes

ANALYZER VERIFICATION

Pre-test setup

1. Turn the power **ON** to the 1220/1225 first and then the Calibration/Test fixture. Verify the Calibration/Test fixture's fan is operational.

2. Enter the following information to configure the 1220/1225 to perform the ADJUST test.

menu	value
Mem Config	Presample [512]
(MENU,0)	Run [on ENTER]
	Update Memory [1]
	[on enter]
Display	[state]
Re-run	[on start]
Timebase	A Sync >10MHz Off
(MENU,1)	B Sync >10MHz Off

	Symbol	Ch	Cl	Bh	Bl	Ah	Al
Conditions (MENU, 3)	A	00	FF	00	FF	00	FF
	B	XX	XXX1XXX1	XX	XXX1XXX1	XX	XXX1XXX1
	C	XX	XX1XXX1X	XX	XX1XXX1X	XX	XX1XXX1X
	D	XX	X1XXX1XX	XX	X1XXX1XX	XX	X1XXX1XX
	E	XX	1XXX1XXX	XX	1XXX1XXX	XX	1XXX1XXX
	F	XX	XXX0XXX0	XX	XXX0XXX0	XX	XXX0XXX0
	G	XX	XX0XXX0X	XX	XX0XXX0X	XX	XX0XXX0X
	H	XX	X0XXX0XX	XX	X0XXX0XX	XX	X0XXX0XX
	I	XX	0XXX0XXX	XX	0XXX0XXX	XX	0XXX0XXX
	J	XXX1XXX1	XX	XXX1XXX1	XX	XXX1XXX1	XX
	K	XX1XXX1X	XX	XX1XXX1X	XX	XX1XXX1X	XX
	L	X1XXX1XX	XX	X1XXX1XX	XX	X1XXX1XX	XX
	M	1XXX1XXX	XX	1XXX1XXX	XX	1XXX1XXX	XX
	N	XXX0XXX0	XX	XXX0XXX0	XX	XXX0XXX0	XX
	O	XX0XXX0X	XX	XX0XXX0X	XX	XX0XXX0X	XX
	P	X0XXX0XX	XX	X0XXX0XX	XX	X0XXX0XX	XX
	Q	0XXX0XXX	XX	0XXX0XXX	XX	0XXX0XXX	XX
	R	FF	00	FF	00	FF	00
	S	AA	55	AA	55	AA	55
	T	55	AA	55	AA	55	AA

Trigger Spec (MENU,2)	1	FOR [00002]: IF [R] NEXT: THEN [GO TO 2]
	2	FOR [00002]: IF [A] NEXT: THEN [STRTXO]
	3	FOR [00001]: NEXT: THEN [GO TO 2]

3. Check that all external fixtures are powered up and operating properly.

4. Set the Calibration/Test Fixture as follows:

SHIFT	- OFF
MODE 0, 1, 2,	- LO, HI, HI (count pattern)
PSEUDO	- OFF
GLITCH	- OFF
SETUP	- HOLD
MINPULSE	- OFF
PATTERN	- 0
TIMEBASE	- 2 (25 MHz)

5. Press the Calibration/Test Fixture's RESET button.

Analyzer Tests

1. Sync 25 MHz test

a. Press the **START** key on the 1220/1225.

NOTE

In order for the system to recognize an analyzer board as A, B, or C the analyzer and the probe must be read. This is done with signals PR/W~, PODSTB~, and the system verifying that signal PD7 is low.

b. Verify the display indicates **<Ready to Run>**. Press **ENTER** and verify **Post-trig <Acquisiton Complete>**.

c. Press **ENTER** and verify a state display with Al counting up and Ah counting down.

d. Press key 2 and verify the word **TRIG** covers sequence 512 and 513 as shown below. Verify the word **STRT** covers two sequences starting at 544 and 576 as shown below.

Loc	Ah	Al
511	XX	XX
TRIG	00	FF
TRIG	XX	XX
.	..	..
.	..	..
.	..	..
528	00	FF
.	..	..
.	..	..
.	..	..
543	XX	XX
STRT	00	FF
STRT	XX	XX
.	..	..
.	..	..
.	..	..
575	XX	XX
STRT	00	FF
STRT	XX	XX

At Loc 512, TRIG on 00 FF or 11 EE
after 512, STRT every 32 locations

e. Verify correct data for the B and C probe groups.

f. Enter the **Timing** menu and verify the acquired data in the display is a count pattern.

2. **Sync 6.25 MHz Test**

   a. Select the **TIMEBASE** menu **(MENU, 1)** and change the display to **Sync <= 10 MHz Off** for all probe groups.

   b. Change the timebase switch on the Calibration/Test fixture to **TIMEBASE 4** (6.25 MHz).

   c. Press the **RESET** button on the Calibration/Test Fixture.

   d. Press the **START** key on the 1220/1225.

   e. Press the **ENTER** key twice.

   f. Verify the data acquired is the same as in the Sync 25 MHz test.

   g. Verify there are only single **TRIG** and **STRT** indicators covering the location numbers in the display.

3. **Word Recognizer Independence Tests**

   a. Enter the following information to configure the 1220/1225 to perform this test.

menu	value
Mem Config	Presample [512]
(MENU,0)	Run [when ready]
	Update Memory [2]
	[on completion]
Display	[state]
Re-run	[on start]

   b. Select the **TRIGGER SPEC** menu **(MENU,2)** and change line **2** from **00002** occurances to **00001**. Change the condition word from **A** to **B**.

   c. Press the **START** key on the 1220/1225 followed by the **2** key.

   d. Verify the data acquired has **TRIG** on CC 33 with **STRT** appearing every four locations in the **STATE** menu.

   e. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **B** to **C** in line **2**.

   f. Press the **START** key on the 1220/1225.

   g. Verify the data acquired has a **TRIG** on DD 22 with **STRT** appearing every four locations in the **STATE** menu.

   h. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **C** to **D** in line **2**.

   i. Press the **START** key on the 1220/1225.

j. Verify the data acquired has a **TRIG** on BB 44 with **STRT** appearing on 33 CC and BB 44 thereafter in the **STATE** menu.

k. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **D** to **E** in line 2.

l. Press the **START** key on the 1220/1225.

m. Verify the data acquired has a **TRIG** on 77 88 with **STRT** appearing on 33 CC and 77 88 thereafter in the **STATE** menu.

n. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **E** to **F** in line 2.

o. Press the **START** key on the 1220/1225.

p. Verify the data acquired has a **TRIG** on DD 22 with **STRT** appearing every four locations on the **STATE** menu.

q. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **F** to **G** in line 2.

r. Press the **START** key on the 1220/1225.

s. Verify the data acquired has a **TRIG** on BB 44 with **STRT** appearing every four locations in the **STATE** menu.

t. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **G** to **H** in line 2.

u. Press the **START** key on the 1220/1225.

v. Verify the data acquired has a **TRIG** on DD 22 with **STRT** appearing on 77 88 and FF 00 thereafter in the **STATE** menu.

w. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **H** to **I** in line 2.

x. Press the **START** key on the 1220/1225.

y. Verify the data acquired has a **TRIG** on DD 22 with **STRT** first appearing on 99 66, then **STRT** appearing on FF 00 and BB 44 after the first complete count pattern.

The remaining steps verify Ah, Bh, and Ch (1225 only).

z. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **I** to **J**.

aa. Press the **START** key on the 1225.

bb. Verify the data acquired has **TRIG** on DD 22 with **STRT** appearing every four location in the **STATE** menu.

cc. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **J** to **K** in line **2.**

dd. Press the **START** key on the 1225.

ee. Verify the data acquired has a **TRIG** on BB 44 with **STRT** appearing every four locations in the **STATE** menu.

ff. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **K** to **L** in line **2.**

gg. Press the **START** key on the 1225.

hh. Verify the data acquired has a **TRIG** on DD 22 with **STRT** appearing on 77 88 and FF 00 thereafter in the **STATE** menu.

ii. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **L** to **M** in line **2.**

jj. Press the **START** key on the 1225.

kk. Verify the data acquired has a **TRIG** on DD 22 with **STRT** first appearing on 99 66 and then on FF 00 and BB 44 thereafter in the **STATE** menu.

ll. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **M** to **N** in line **2.**

mm. Press the **START** key on the 1225.

nn. Verify the data acquired has a **TRIG** on CC 33 with **STRT** appearing every four locations on the **STATE** menu.

oo. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **N** to **O** in line **2.**

pp. Press the **START** key on the 1225.

qq. Verify the data acquired has a **TRIG** on DD 22 with **STRT** appearing every four locations in the **STATE** menu.

rr. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **O** to **P** in line **2.**

ss. Press the **START** key on the 1225.

tt. Verify the data acquired has a **TRIG** on BB 44 with **STRT** appearing on 33 CC and BB 44 thereafter in the **STATE** menu.

uu. Select the **TRIGGER SPEC** menu **(MENU,2)** and change the condition word from **P** to **Q** in line **2.**

vv. Press the **START** key on the 1225.

ww. Verify the data acquired has a **TRIG** on 77 88 with **STRT** on 33 CC and 77 88 thereafter in the **STATE** menu.

4. Async Trigger Test

In order to perform this test you must first configure the 1220/1225 Logic Analyzer with the following setup information.

menu	value				
Timebase (menu,1)	A	Async	50 MHz	Off	
	B	Async	50 MHz	Off	
	C	Async	50 MHz	Off	(1225 only)
Trigger (menu,2)	2 FOR [00001]: IF [A] NEXT: THEN [STRTXO]				

a. Change the **TIMEBASE** on the Calibration/Test fixture to **2** (25 MHz).

b. Press the **RESET** button on the Calibration/Test Fixture.

c. Press the **START** key.

NOTE

Due to the nature of an async clock, edges of the count pattern may be within +/- 1 clock per data bit.

d. Verify **TRIG** is highlighted for four locations beginning at location 512. Verify the trigger word FF appears somewhere within this highlighted area for each probe group.

e. Verify the **STRT** exists after the **TRIG** and it is also four locations long with the trigger word FF within the highlighted area for each probe group.

f. Change the **Timebase** (menu 1) as follows:

```
A Async 100 MHz Off
B Async 100 MHz Off
C Async 100 MHz Off (1225 only)
```

g. Press the **START** key.

h. Verify **TRIG** is highlighted for eight locations beginning at location 512. Verify the trigger word F appears somewhere within this highlighted area for each probe group.

i. Verify the **STRT** exists after the **TRIG** and that it also is eight locations long, with the trigger word F within the highlighted area for each probe group.

5. Word Recognizer Control RAM Test

In order to perform this test you must first configure the 1220/1225 Logic Analyzer with the following setup information.

Word Recognizer RAM 1 Setup Information

menu	value	
Timebase (menu,1)	A Sync > 10 MHz Off B Sync > 10 MHz Off C Sync > 10 MHz Off	(1225 only)
Trigger Spec (menu,2) (Use Quick Ent) (The 2 key)	1 IF [T] THEN [START] 2 IF [S] THEN [STOP] 3 IF [T] THEN [START] 4 IF [S] THEN [STOP] 5 IF [T] THEN [START] 6 IF [S] THEN [STOP] 7 IF [T] THEN [START] 8 IF [S] THEN [STOP] 9 IF [T] THEN [START] A IF [S] THEN [STOP] B IF [T] THEN [START] C IF [S] THEN [STOP]	

Table 4-1 relates to the front panel menu operation of the trigger menu and the the word recognizer control RAM. Use this information to troubleshoot the Analyzer board.

Table 4-1
Front Panel Command to Word Recgonizer RAM

RAM Signal Name	Front Panel Commands							
	fill	start	strtx	strto	strtxo	stop	cont	goton
gotod	0	0	0	0	0	0	0	0
stpc	0	0	0	0	0	1	0	0
gotoc	0	0	0	0	0	0	0	1
rfd	0	0	0	0	0	0	0	0
stpdn/	1	1	1	1	1	1	1	1
strtc	0	1	1	1	1	0	0	0
stpd	0	0	0	0	0	0	0	0
strtd	0	0	0	0	0	0	0	0

a. Verify the Calibration/Test fixture's timebase is set to **TIMEBASE 2** for a 25 MHz clock rate.

b. Press the **RESET** button on the Calibration/Test Fixture.

c. Press the **START** on the 1220/1225.

d. Verify the 1220/1225 displays **Post-trig <Running>**.

e. Press the **ENTER** key, verify the state table appears.

f. Press the **2** key to display the trigger word.

g. Verify either 1 or 2 below.

1. **TRIG** on 66 99 at sequence 1974, with **STRT** at sequences 1986, 1998, 2010, 2022, and 2034; with a repeated count pattern of 66 99 through BB 44.

2. **TRIG** on 55 AA at sequence 1986, with **STRT** at sequences 1996, 2006, 2016, 2026, and 2036; with a repeated count pattern of 55 AA through CC 33.

h. Repeat steps c through f until both results shown in step g are verified.

Word Recognizer RAM 2 Setup Information

a. In order to perform the rest of the test you must first configure the 1220/1225 Logic Analyzer with the Word Recgonizer RAM 2 setup information as per the instruction below.

This menu setup is identical to the Word Recognizer RAM 1 setup with the exception of the **TRIGGER SPEC** menu. Those changes are shown as follows:

Trigger Spec	1 IF [S]	THEN [START]
(menu,2)	2 IF [T]	THEN [STOP]
	3 IF [S]	THEN [START]
(use Quick Entry)	4 IF [T]	THEN [STOP]
	5 IF [S]	THEN [START]
	6 IF [T]	THEN [STOP]
	7 IF [S]	THEN [START]
	8 IF [T]	THEN [STOP]
	9 IF [S]	THEN [START]
	A IF [T]	THEN [STOP]
	B IF [S]	THEN [START]
	C IF [T]	THEN [STOP]

b. Press the **START** key.

c. Verify the 1220/1225 displays **Post-trig <Running>**

d. Press the **ENTER** key, verify the state table appears..

e. Press the **2** key to display the trigger word.

f. Verify either 1 or 2 below.

1. **TRIG** on BB 44 at sequence 2010, with **STRT** at sequences 2016, 2022, 2028, 2034, and 2040; with a repeated count pattern of BB 44 through 66 99.

2. **TRIG** on AA 55 at sequence 2022, with **STRT** at sequences 2026, 2030, 2034, 2038, and 2042; with a repeated count pattern of AA 55 through 77 88.

g. Repeat steps b through e until both results shown in step f are verified.

6. CSEL Test (40 ns)

In order to perform this test you must first configure the 1220/1225 Logic Analyzer with the following setup information.

menu	value
Mem Config (MENU,0)	Presample [512] Run [when ready] Update Memory [3] [on completion] Display [state] Re-run [on start]

```
TRIGGER SPEC   1 FOR [00001]: IF [ TRIGIN ] NEXT:THEN [CONTIN]
  (menu,2)     2 FOR [00001]: IF [EXTERNAL] NEXT:THEN [CONTIN]
               3 FOR [00001]: IF [A        ] NEXT:THEN [START ]
               4 FOR [00001]: NEXT:THEN [STOP  ]
               5 FOR [00001]: IF [S        ] NEXT:THEN [START ]
               6 FOR [00002]: NEXT:THEN [STOP]
               7 FOR [00001]: IF [T        ]:THEN      [START]
               8 FOR [00004]: NEXT:THEN [STOP]
               9 FOR [00001]: IF [R        ]:THEN      [START]
               A FOR [00008]: NEXT:THEN [STOP  ]
               B FOR [00001]: NEXT:THEN [CONTIN]
               C FOR [00001]: NEXT:THEN [GOTO 3]
```

a. Connect a 50 ohm terminator to the **Cross Trigger In** BNC connector on the rear panel of the 1220/1225.

b. Press the **START** key.

c. Verify the display indicates **Pre-trig** and **<Running>**.

d. Disconnect the 50 ohm terminator and verify the 1220/1225 indicates, **Post-trig** and **<Acquisition complete>**.

e. Verify the state display contains the information in the following example. Scroll through the data and check for the proper number of data between **STRT**s.

NOTE

Because >10MHz is selected in the **Timebase Menu** for this test, the **TRIG** and **START** points fall within 2 clock cycles and all the counts set in the For windows of the Trigger Spec. menu will be doubled.

Data for the B and C probes should match this A probe example.

Loc	Ah	Al	
TRIG	00	FF	
TRIG	FF	00	
514	EE	11	two (2) occurances
515	DD	22	
STRT	AA	55	
STRT	99	66	four (4) occurances
518	88	77	
519	77	88	
520	66	99	
521	55	AA	
STRT	66	99	
STRT	55	AA	
524	44	BB	
525	33	CC	eight (8) occurances
526	22	DD	
527	11	EE	
528	00	FF	
529	FF	00	
530	EE	11	
531	DD	22	
STRT	00	FF	
STRT	FF	00	
534	EE	11	
535	DD	22	
536	CC	33	sixteen (16) occurances
537	BB	44	
538	AA	55	
539	99	66	
540	88	77	
541	77	88	
542	66	99	
543	55	AA	
544	44	BB	
545	33	CC	
546	22	DD	
547	11	EE	
548	00	FF	
STRT	00	FF	**
STRT			REPEATS PROGRAM

7. DSEL Test (6.25 MHz)

In order to perform this test you must first configure the 1220/1225 Logic Analyzer with the following setup information.

DSEL Setup Information

menu	display values	
TIMEBASE (menu,1)	A Sync <= 10 MHz Off B Sync <= 10 MHz Off C Sync <= 10 MHz Off	(1225 only)

```
TRIGGER SPEC  1 FOR [00001]: IF [ TRIGIN ]: NEXT THEN [CONTINUE]
 (menu,2)     2 FOR [0000]1: IF [EXTERNAL]: NEXT TNEN [CONTINUE]
              3 FOR [00001]: IF [A        ]: THEN [START]
                  ELSE       IF [A        ]: NEXT: THEN [GOTO C]
              4 FOR [00001]: NEXT: THEN [STOP]
              5 FOR [00001]: IF [S        ]: THEN [START]
                  ELSE       IF [S        ]: NEXT: THEN:[GOTO C]
              6 FOR [00002]: NEXT: THEN [STOP]
              7 FOR [00001]: IF [T        ]: THEN [START]
                  ELSE       IF [T        ]: NEXT: THEN:[GOTO C]
              8 FOR [00004]: NEXT: THEN [STOP]
              9 FOR [00001]: IF [R        ]: THEN [START]
                  ELSE       IF [R        ]: NEXT: THEN:[GOTO C]
              A FOR [00008]: NEXT: THEN [STOP]
              B FOR [00001]: NEXT: THEN [GOTO 1]
              C FOR [00001]: NEXT: THEN [GOTO C]
```

a. Change the Calibraton/Test fixture to a 6.25 MHz square wave output (**TIMEBASE 4**).

b. Press the **RESET** button on the Calibration/Test Fixture.

c. Press the **START** key on the 1220/1225.

d. Verify the data is as shown:

Loc	Ah	Al	
TRIG	00	FF	
513	FF	00	} one occurence
STRT	AA	55	
515	99	66	} two occurences
516	88	77	}
STRT	55	AA	
518	44	BB	}
519	33	CC	} four occurences
520	22	DD	}
521	11	EE	}
STRT	FF	00	
523	EE	11	}
524	DD	22	}
525	CC	33	} eight ocurrences
526	BB	44	}
527	AA	55	}
528	99	66	}
529	88	77	}
530	77	88	}
STRT	00	FF	repeats program

8. Memory Test

Setup Information

Use the following information to configure the analyzer to perform the Memory test.

Menu	Display Value
MEM CONFIG (menu,0)	Presample [0512] Run [when ready] Update Memory [4] [On Completion] Display [Timing] Re-run [ON Start]
TIMEBASE (menu,1)	A sync > 10 MHz Off B sync > 10 MHz Off C sync > 10 MHz Off (1225 only)
Trigger Spec (menu,2)	1 For [00001]: IF [A] NEXT: THEN [START] 2 Fill

a. Change the **TIMEBASE** to **2** on the Claibration/Test fixture. Change the **MODE** switches **0, 1,** and **2** to HI, LO, and LO (complement mode).

b. Press the **RESET** button on the Calibration/Test fixture.

c. Press the **START** key on the 1220/1225.

d. Press the **2** or **3** key to select a resolution of **[96]**.

e. Press the **0** or **1** key to select a scrolling factor of **[96]**.

f. Using the up or down cursor, check that all data lines toggle high and low once for every clock cycle through out the entire memory range. There cannot be any gaps or holes in the acquisition.

NOTE

To verify all three porbe groups you will have to page the display by using the **4** or **5** keys.

g. Select the **TRIGGER SPEC** menu **(MENU, 2)** and change the condition word in line **1** from **A** to **R**.

h. Repeat steps c and f.

i. Change the Pattern to **5** on the Calibration/Test fixture.

j. Select the **TRIGGER SPEC** menu **(MENU, 2)** and change the condition word in line **1** from **R** to **S**.

k. Press the **START** key on the 1220/1225.

l. Using the up and down cursor, check for the proper data through out the entire memory range.

m. Select the **TRIGGER SPEC** menu **(MENU, 2)** and change the condition word in line **1** from **S** to **T**.

n. Repeat steps 1 and m.

OPTION 01 VERIFICATION

EQUIPMENT SETUPS AND CONNECTIONS

1. Set the 4051/4052 beside the 1220/1225 system.
2. Connect one end of the 1220/1225 RS232 cable to the RS232 port at the rear of the 4051/4052 Computer.
3. Connect both the 4051/4052 and 1220/1225 system to line power.

TEST SETUP AND CONNECTIONS

1. Connect the RS232 cable to the 1220/1225.
2. Power up the 1220/1225 system. Verify the display appears within 30 seconds.
3. Power up the 4051/4052 Computer.

OPTION 01 TEST

Power-Up Check

1. On the 1220/1225 system select the main menu by pressing the **MENU** key.
2. Verify the Option 01 module is displayed in the menu.
3. Select the Option 01 menu by pressing the **E** key.
4. Select the **2400** baud rate.
5. Set the word length to **8**.
6. Set the parity to **N**.
7. Set the stop bits to **1**.
8. Enter the following program to the 4051/4052:

```
CALL CMINIT
PRINT @40, 30:
CALL "RATE", 2400, 5, 2
CALL "TERNIM"
```

9. Enter **RUN** to the 4051/4052.

10. Push the **N** key on the 4051/4052 and verify the RS232 menu appears on the screen.

11. Apply RS232 commands in the menu to verify proper action.

12. To abort the program when you are finished press the user definable key (UDK) 5 on the 4051/4052.

OPTION 02 VERIFICATION

EQUIPMENT SETUPS AND CONNECTIONS

Power-Up and Recognition Check

1. Insure the power is OFF to the printer and the 1220/1225.
2. Connect the printer cable bwetween the Option 02 port and the printer.
3. Turn the 1220/1225 ON.
4. Verify that the 1220/1225 recognizes the printer option and displays **PRINTER PORT** at menu selections D, E, or F.

Printer Identification Check

1. Select the **PRINTER PORT** menu.
2. Verify the **Status of Printer** in the option menu shows **NOT Powered Up.**
3. Turn the power **ON** to the printer.
4. Verify the **Status of Printer** in the option menu momentarily displays **Busy** or **Off Line** and then displays **Ready** and **On Line.**

Memory Printout Test

1. From the printer option menu, press the **2** key to print the memory data.
2. While the printer is printing, press all the other keys and verify the printout does not stop.
3. Press the **NOTES** and **ENTER** keys at the same time. This should create a system reset and stop the printer.

Soft Key Operations Checks

1. Enter the main menu **(MENU)** and select the **PRINTER PORT** option menu.
2. Select the **Soft Key(=D)** to **ON** using the **1** or **0** keys (use cursor as necessary to select **Soft Key(=D)** field).
3. Use the cursor down key to select the **Density = [60 D/I].**

4. Press the **D** key and verify the printer prints out the current display.

5. After the printer is done repeat steps 3 and 4 using densities of **[80 D/I]** and then **[90 D/I]**.

6. Verify the printer prints out a slightly smaller display each time the density is increased.

TEST CARD VERIFICATION

Battery Checks

Using the DMM check the voltage from the top of the battery to a GND square pin. Voltage values should be between 2.6 volts and 3.5 volts. If greater than 3.5 volts use a 100 ohm resistor across the battery and monitor with theDMM until the battery is within specification. If lower then 2.6 volts exchange battery. Refer to Section 3: Maintenance for Battery handling information.

TIMING DIAGRAM

The timing diagram in Figure 4-2 can be used to verify the Training/Test Card.

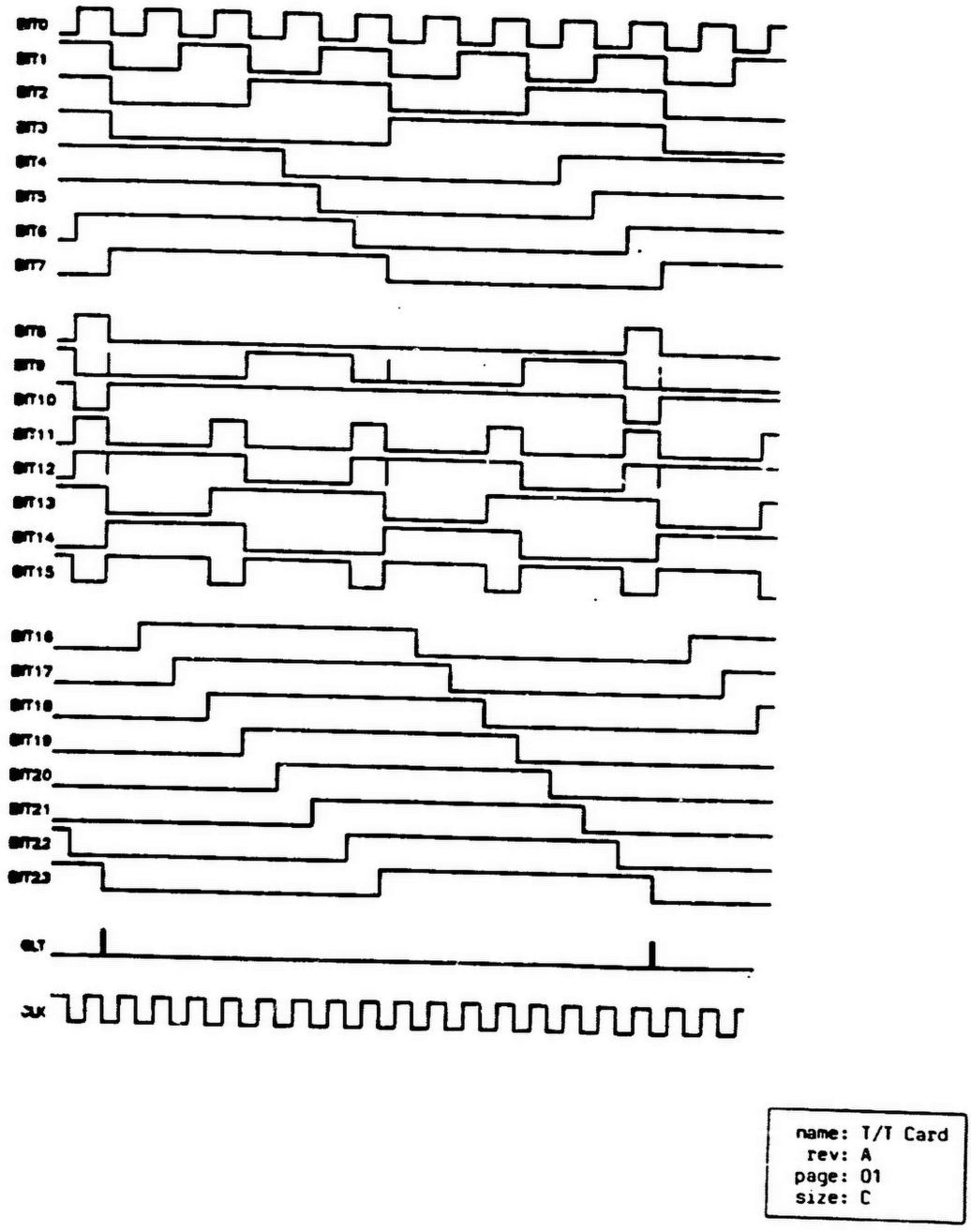


Figure 4-2. Training/Test Card Timing Diagram.

ADJUSTMENT

CRT DISPLAY ASSEMBLY AJUSTMENT

EQUIPMENT SETUPS AND CONNECTIONS

Display Assembly Setup

1. Turn the power switch to **ON** on to the 1220/1225 Mainframe and verify the power up display appears within 30 seconds.
2. Allow the 1220/1225 three minutes to warm up before continuing with this procedure. Failure to allow the appropriate warmup time may result in realignment of the display at a later time.
3. Install the Picture Grid Alignment Fixture (PGAF) onto the face of the CRT.
4. Select the **Timing Display** (press **MENU** key, **7** key).

VERIFICATION AND ADJUSTMENT

WARNING

The following adjustments are all near the HIGH VOLTAGE of the CRT. Use extreme caution when making any of the following adjustments. It is suggested you keep your free hand in your pocket during these adjustments to minimize your chance of a fatal shock .

Display Brightness and Contrast Adjustments

1. If there is no timing diagram displayed press the **F** key followed by the **4** or **5** key. This selects which probe page to display.
2. Select the **VIDEO/KEYPAD** menu (press **MENU** key followed by **C**). Make sure the intensity indicator is under the **e** of the word **intensity** in the display header.
3. Center the DTT contrast potentiometer R79 labeled **CONTRAST CONTROL**. This pot is located approximately in the center of the display assembly board located under the CRT.

NOTE

It may be necessary to increase the **MASTER BRIGHTNESS** R1 control (located in left center of display assembly board) after centering the **CONTRAST CONTROL** pot R79.

4. Using the right arrow set the intensity control to the far right on the display. This is **H** (full) intensity.

5. Adjust the **MASTER BRIGHTNESS** control R1 until the raster lines just disappear from sight.

6. Using the left arrow key verify the timing display can just be seen when the intensity control is to the far left on the display. This is L (low) intensity. If it is too bright continue to adjust the **MASTER BRIGHTNESS** control R1 down using the previous two steps four and five. It may be necessary to adjust both the **CONTRAST CONTROL** R79 and the **MASTER BRIGHTNESS** pot R1 to hide the raster lines during (L) low intensity.

7. Set the intensity to H (full) and verify the display menu. Adjust the **CONTRAST CONTROL** pot R79 until the word in the center at the top of the display is as clear as possible.

8. Re-check the display at L (low) and H (high) intensities.

9. Set the **VIDEO/KEYPAD** menu back to normal intensity. Set the indicator under the **e** of the word **intensity** in the display header.

10. Select the **STATE** menu **(MENU,5)**.

11 Press the **3** key and check that the **STATE** display cursor is visible at normal intensity. If it is not visible readjust the display intensity.

Position Adjustments

1. Adjust width coil (L2) (located back center of display assembly board, red/white) and R34 to center the **TIMING** display within the vertical limits of the Picture Grid Alignment Fixture.

2. Adjust the **VERTICAL LINEARITY CONTROL** pot R12 (located at the right front of the board, next to the yolk) until the display characters on the top and bottom of the display are of equal size.

3. Adjust the **HORIZONTAL CENTERING** pot R34 (far left corner of the display assembly board) to align the display picture to the left edge of the Picture Grid Alignment Fixture.

4. Adjust the **HEIGHT CONTROL** pot R10 (located front left corner of ECB) until the bottom edge of the display fits within the limits of the Picture Grid Alignment Fixture.

NOTE

The display line containing the date falls between the top two lines on the Picture Grid Alignment Fixture. The display line containing the menu information falls between the bottom two lines of the PGAF.

5. Adjust the **FOCUS CONTROL** pot R48 (located at right front corner of the display assembly board) only if the display is out of focus at normal picture intensity.

6. If the display has a vertical alignment problem use the **VERTICAL HOLD CONTROL** potentiometer R5 to correct it.

7. For cases which have pincushion or barrel affect looking rasters or tilted displays. The pincushion/barrel affects can be adjusted by using or adding magnets to the CRT yoke. The tilted display can be adjusted by releasing the yoke clamp just enough to allow the yoke to be turned. Movement of the yoke will affect other previous adjustments. Re-check all adjustments if the yoke is moved.

CONTROL BOARD ADJUSTMENT

EQUIPMENT SETUPS AND CONNECTIONS

Connect the P6442 probes to the 1220/1225 Logic Analyzer.

CONTROLLER BOARD CHECKS

NOTE

Connector numbering convention is left to right starting at the back of the board (interconnect connector away from you).

NOTE

Power to all fixtures must be **OFF** before any removal or connecting of boards, probes, or parts is to be done.

Check that the two batteries have a + symbol visible. Check the batteries for the following information.

Measure B1 at top of the battery and U8 pin 14 (7170)

Measure B2 at top of the battery and end of R3 near edge of ecb

	B1 (in corner)	B2 (away from corner)
1220	2.95 -> 3.5volts	2.75 -> 3.5volts
1225	2.95 -> 3.5volts	2.65 -> 3.5volts

NOTE

If voltage is higher than 3.5 volts, apply a 100 ohm short across the battery until the voltage is within specifications.

Async Timebase Clock Pulse Adjustment

1. Setup the analyzer as follows:

menu	display value
(MENU,0) MEM CONFIG	512 on enter 1 on enter timing on start
(MENU,1) TIMEBASE	A Async 10 MHz OFF B Async 100 MHz OFF
(MENU,2) TRIGGER SPEC	1 FOR [00001]: IF [A]:THEN [START] 2 FILL
(MENU,3) CONDITION	A : XX XX XX XX

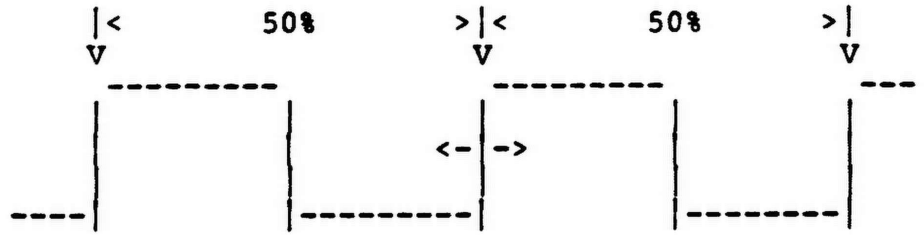
2. Set the oscilloscope sweep rate to .2 uSec/div., X10 sweep magnification, trigger on channel 1 rising edge.

   Connect channel 1 to U3 pin 10 (CLKA).
   Connect channel 2 to U3 pin 8 (CLKB).

3. Press the **START** key.

4. Display three rising edges on the oscilloscope display for channel 1 (CLKA). Adjust potentiometer VR1 to center the middle rising edge between the two outer rising edges. Verify the period is approx. 100 nanosecond (nSec) at U3 pin 10 (CLKA).

5. Verify the period is symetrical for U3 pin 8 (CLKB) as shown.



   a. If width is < 100ns., punch pin 7 of zero-ohm resistor S2. This will break the connection between the two points in S2.

6. Use the **TIMEBASE** menu to verify the clock frequencies at pins 8 (CLKB) and 10 (CLKA) of U3 for the following clock selections.

CLK	1	2	3	4	5
A	100 MHz	10 MHz	5 MHz	10 MHz	50 Hz
B	25 MHz	5 MHz	2.5 MHz	1 MHz	25 Hz

CLK	6	7	8	9	10
A	25 MHz	5 MHz	2.5 MHz	1 MHz	25 hz
B	100 MHz	10 MHz	5 MHz	10 MHz	50 hz

   a. setup **MEM CONFIG (MENU,0)** to run **ON ENTER.**

   b. Select frequency in **TIMEBASE** menu **(MENU,1)** from table above.

   c. Press the **START** key.

   d. Measure the frequency at U3.

   e. Press the **STOP** key.

   f. Press the **1** key twice. Should display **TIMEBASE** menu.

   g. Repeat steps c-f for all remaining timebase table values.

7. Press the **STOP** key and remove the scope probes from controller.

ANALYZER BOARD ADJUSTMENTS

The following procedures are used for performance adjustment of the Analyzer board. In order to reach the adjustments on the board you will need to use the Extender board and cables provided in the Service Maintenance Kit. Connect the Video board (with the Controller board still connected on top of the Video board) to the Extender board connector marked **VIDEO CONNECTOR.** Connect the Analyzer board(s) to the connector marked **ANALYZER CONNECTOR.** The Analyzer board that is to be adjusted must be brought to the top of the analyzer stack. This will not affect how the Analyzer board is recognized since A, B and C Analyzer board recognition is accomplished by jumper configuration on an individual board and not the order in which the Analyzer boards are stacked. These connections will require removal of the Video and Analyzer boards from the mainframe. Refer to the Disassembly/Reassembly Instructions in Section 3: Maintenance.

The pins markers **+5, GND, COMTRIG, +12 V, and -12V** are used for reference points and are not connections.

NOTE

Before proceeding insure all power is **OFF** to all fixtures. Always turn **ON** the 1220/1225 first, then any external equipment second. Always turn **OFF** the external equipment first and the 1220/1225 last.

Analyzer Board Jumper Configuration

The Analyzer boards are designated as A, B, C starting from the bottom of the stack and going up. The Analyzer boards are ordered this way to enable proper cable routing to the front panel. 1220 Logic Analyzers only have A and B boards while the 1225 Logic Analyzers have all three.

To ensure the proper jumper configuration/recognition of a particular Analyzer board refer to Figures 4-3, 4-4, 4-5 and 4-6 on the following pages. Figure 4-6 shows the configuration for J2. J2 configurations are done on the bottom of the A board only for the 1220/1225 configurations.

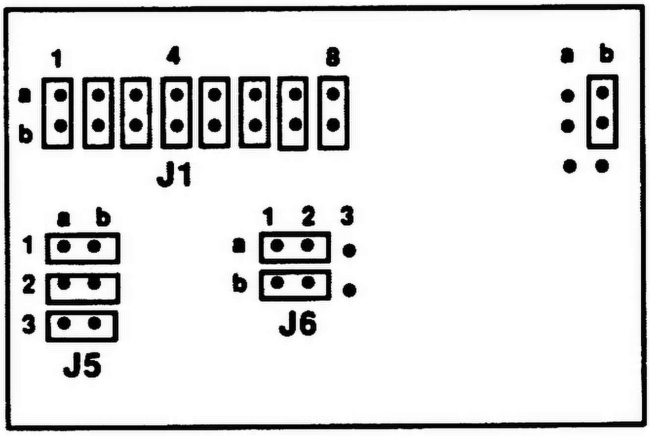


Figure 4-3. Board A Configuration.

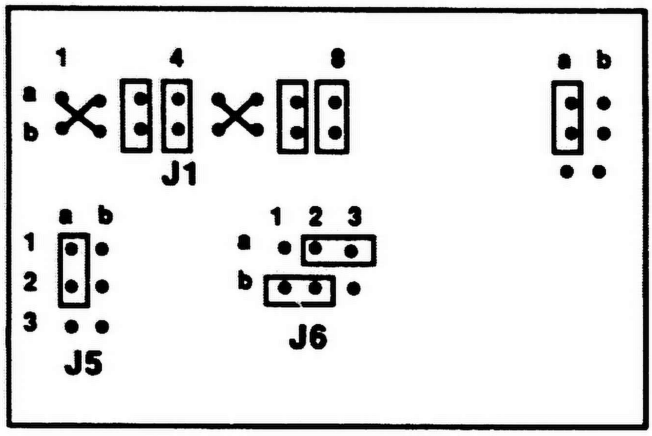


Figure 4-4. Board B Configuration.

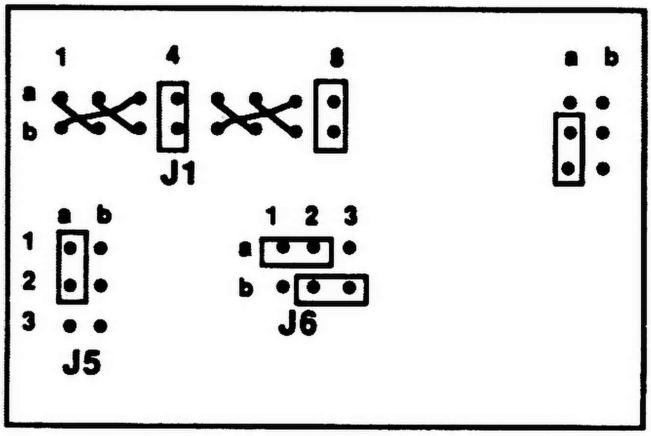


Figure 4-5. Board C Configuration.

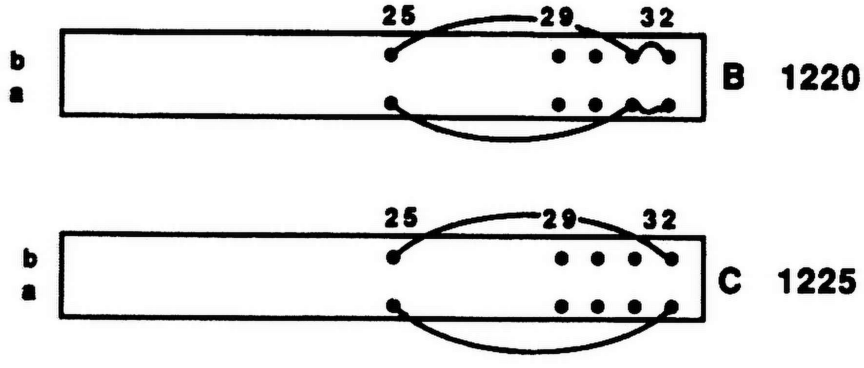


Figure 4-6. J2 Configuration.

NOTE

In order for the system to recognize an analyzer board as A, B, or C the analyzer and the probe must be read. This is done with signals PR/W~, PODSTB~ and insuring that signal PD7 is low.

Pre-test Setup

1. Turn the power ON to the 1220/1225 first and then the Calibration/Test fixture. Verify the Calibration/Test fixture's fan is operational.

2. Enter the following information to configure the 1220/1225 to perform the adjustment test.

menu	value
Mem Config (MENU,0)	Presample [512] Run [on ENTER] Update Memory [1] [on enter]
Display	[state]
Re-run	[on start]
Timebase (MENU,1)	A Sync >10MHz Off B Sync >10MHz Off

Conditions (MENU, 3)

Symbol	Ch Cl Bh Bl Ah Al
A	00 FF 00 FF 00 FF
B	XX XXX1XXX1 XX XXX1XXX1 XX XXX1XXX1
R	FF 00 FF 00 FF 00
S	AA 55 AA 55 AA 55
T	55 AA 55 AA 55 AA

Trigger Spec (MENU,2)

1 FOR [00002]: IF [R] NEXT: THEN [GO TO 2]
2 FOR [00002]: IF [A] NEXT: THEN [STRTXO]
3 FOR [00001]: NEXT: THEN [GO TO 2]

3. Check that all external fixtures are powered up and operating properly.

4. Set the Calibration/Test Fixture as follows:

SHIFT - OFF
MODE 0, 1, 2, - LO, HI, HI (count pattern)
PSEUDO - OFF
GLITCH - OFF
SETUP - HOLD
MINPULSE - OFF
PATTERN - 0
TIMEBASE - 2 (25 MHz)

5. Press the Calibration/Test Fixture's RESET button.

Oscilloscope Setup

Set the oscilloscope as follows:

Vertical mode	-	ALT.
Volts/div	-	1
X10 Mag	-	ON
Time/div	-	A and B; .05 usec
Trigger	-	channel 1

Clock Delay Adjustment

1. Set the Short/Open (lines B13/B16) switch on the Analyzer Extender to the SHORT position.

2. Connect the oscilloscope channel 1 to PODCLK (U94 pin 11).

3. Connect the oscilloscope channel 2 to CE (U98 pin 11).

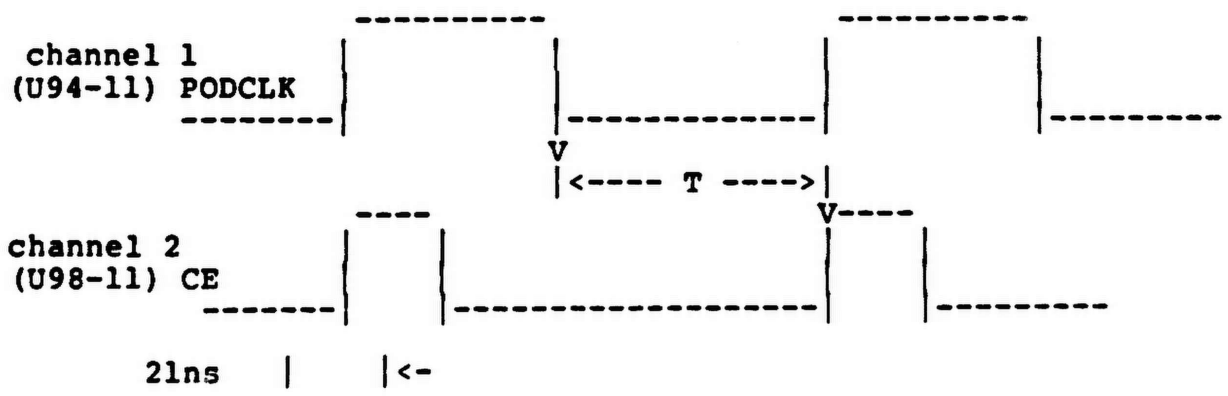
4. Press the 1220/1225 **Start** key followed by the **Enter** key.

5. Adjust P1 to obtain 38 +/- 1ns (T) delay from the falling edge of PODCLK to the rising edge of CE.

NOTE

Threshold voltage will vary depending if high speed C-MOS TTL compatable (HCT) or high speed C-MOS (HC) technology is being probed. Threshold for HCT is 2.0 V and 2.5 V for HC.

Sync clock rate = 25 MHz



NOTE

Timebase selection of system affects active edge of signals. Less than a 10 MHz sync rate, the rising edge of PODCLK is an active edge. More than a 10 MHz sync rate, the falling edge of PODCLK is an active edge.

CE Pulse Width Adjustment

1. Adjust P2 to obtain a 21ns +/- 1ns pulse width for CE (U98 pin 11).
2. Re-check that the Clock Delay (T), falling edge of PODCLK to rising edge of CE, is still at 38 +/- 1ns.

NOTE

In order to achieve the required delays it may be necessary to repeat the Clock delay adjustment by pressing the 1220/1225 **Start** key followed by the **Enter** key, and and adjusting P2 to obtain a 21 ns +/- 1 ns pulse width for CE (U98 pin 11).

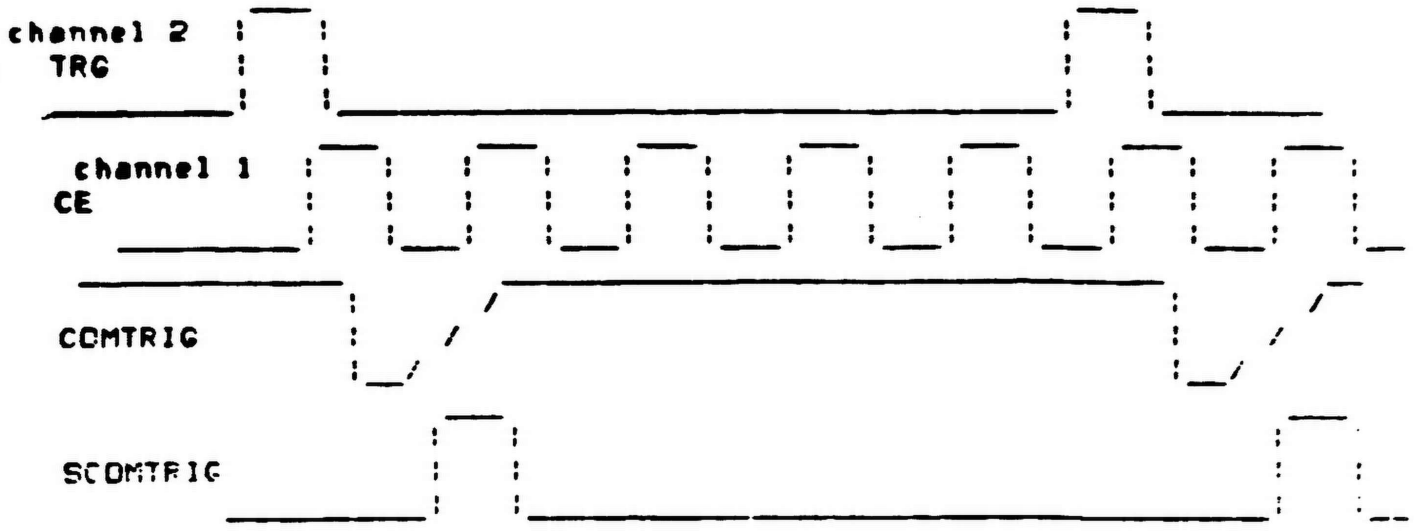
3. Press the **STOP** key on the 1220/1225.
4. Place the short/open switches (lines B13/B16) on the analyzer extender in the open position.

NOTE

P3 is not adjusted and should be left in the fully clockwise position.

Trigger Signal Checks

1. Change the **TRIGGER** menu **(menu,2)** condition to **B** in line 2.
2. Change the **TIMEBASE** menu **(menu,1)** to **Sync > 10 MHz OFF** for all board sets.
3. Connect oscilloscope channel 1 to CE at U24 pin 4.
4. Connect oscilloscope channel 2 to TRG at U24 pin 3.
5. Set the Short/Open (lines B13/B16) switch on the analyzer extender card to the **SHORT** position.
6. Press the 1220/1225 **START** key followed by the **ENTER** key. Verify the display indicates **Post Trigger** and **<Running>**.



7. Set the oscilloscope's TIME/DIV selector to 1.0 usec and verify the display for TRG and CE as shown on following page.

8. Verify there are no glitches on the TRG signal.

9. Verify there are five (5) CE pulses between TRG pulses.

10. Connect channel 1 to J2-B27. Verify one TRG signal for one COMTRIG.

11. Connect channel 1 to J2-A28. Verify the signal displayed is the same signal as the one displayed in the previous step.

12. Connect channel 1 to U8 pin 5. Verify this signal matches the TRG signal only separated by a single clock cycle.

13. Press the **STOP** key on the 1220/1225.

Verify Sample RAM Timing

1. Use the fastest address to the fastest data of RAM's U16, U17, U18, or U19 to check the sample RAM timing.

2. Connect the oscilloscope channel 1 to RAM address A0 (U16 pin 8). Ground is U16 pin 12.

3. Connect the oscilloscope channel 2 to RAM write control SRW (U16 pin 21).

4. Press the **START** key on the 1220/1225.

5. Set the oscilloscope to trigger off channel 1. Verify the rising and falling edges of A0 occur >3 ns (T) before the falling or rising edge of the SRW pulse.

* = most critical area for (T)

6. Connect the oscilloscope channel 1 to data bit B1 (U16 pin 0). Ground is U16 pin 12.

7. Set the oscilloscope to trigger off channel 1. Verify the rising and falling edges of B1 occur >3 ns (T) before the falling or rising edge of the SRW pulse.

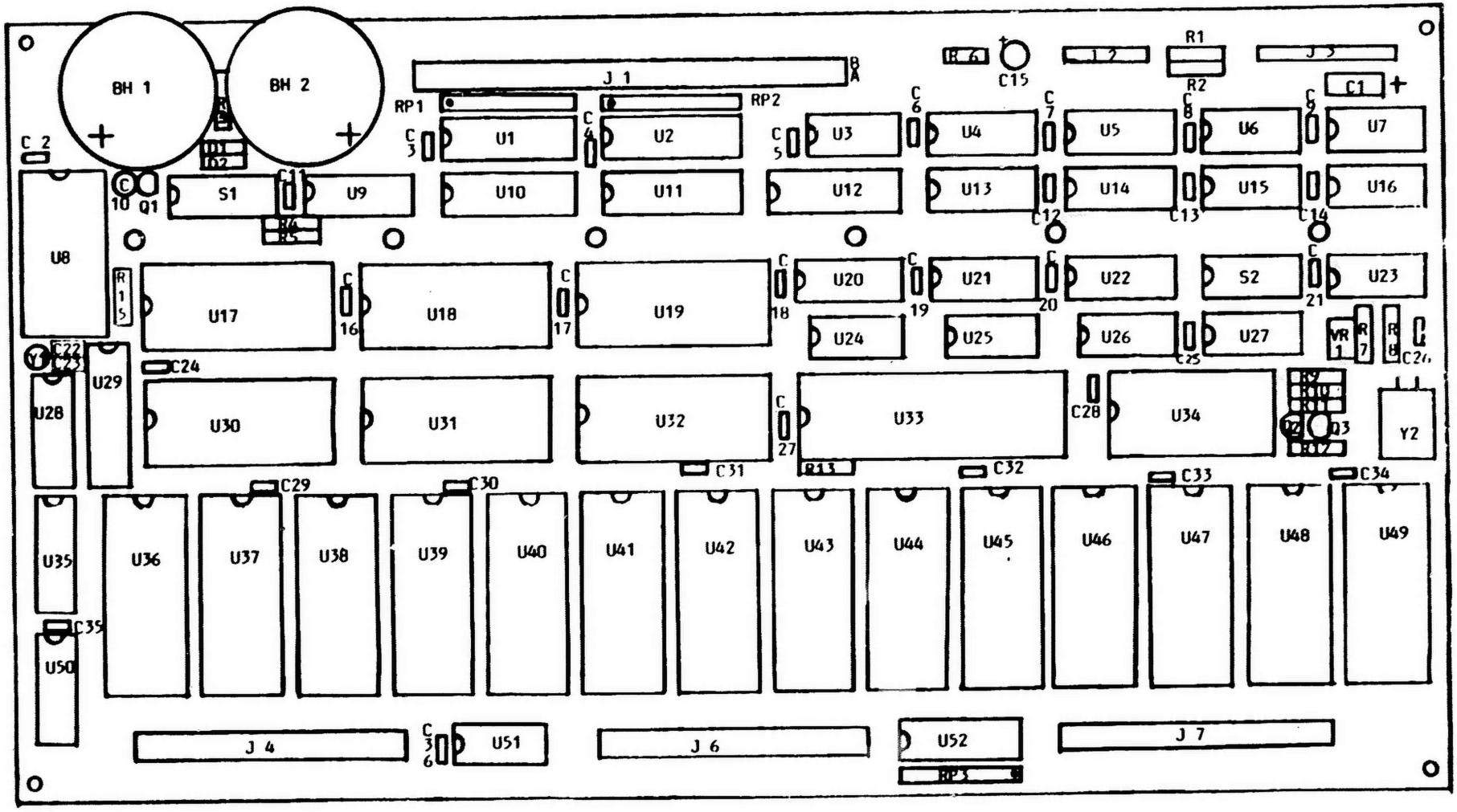
8. Press the **STOP** key on the 1220/1225.

9. Remove oscilloscope probes from the Analyzer board.

10. Turn power to the Test Fixture off first and then the 1220/1225.

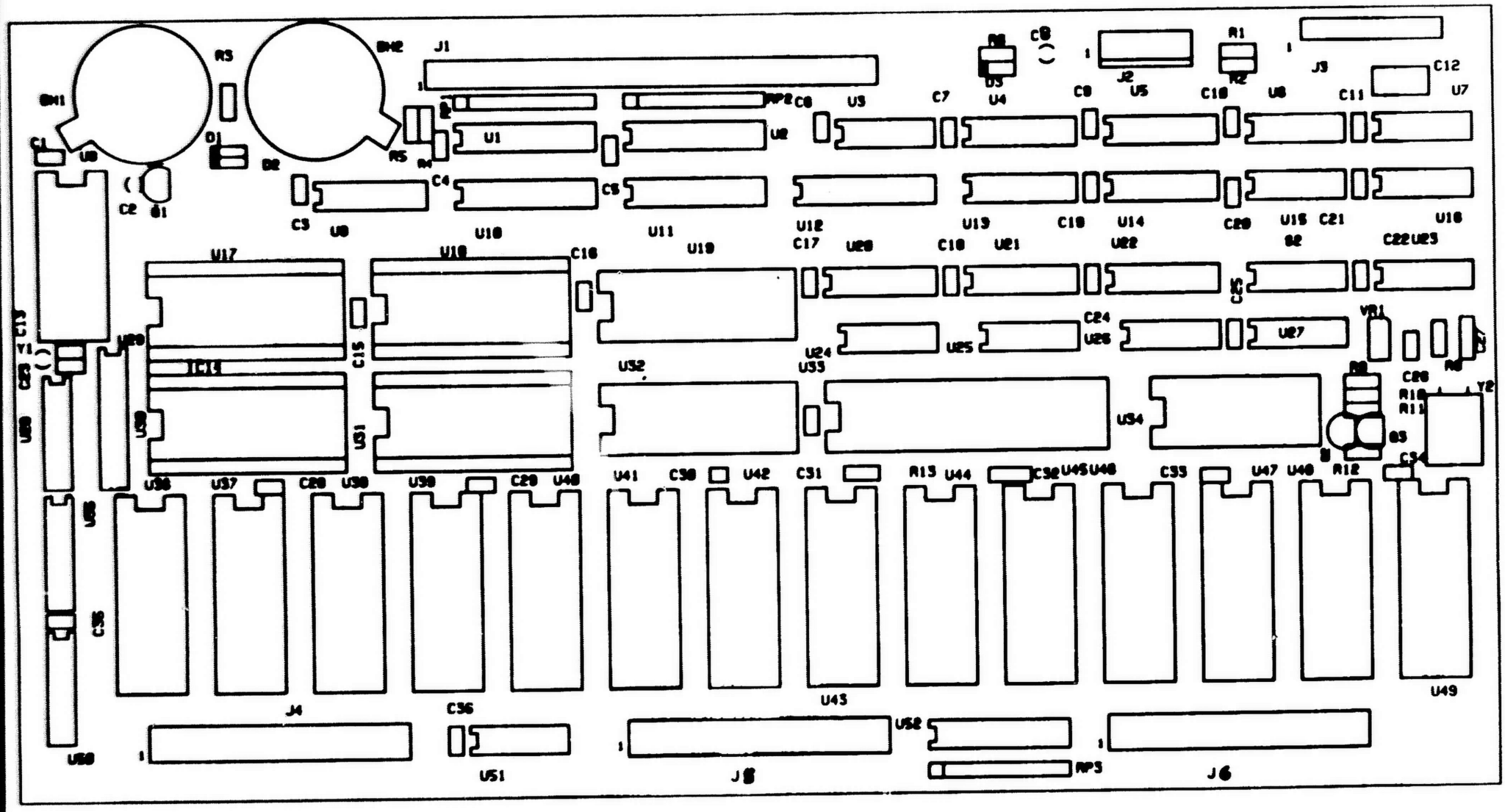
11. Disconnect the P6442 probes from the analyzer cards and Test Fixture.

12. Disconnect all boards from the Extender board. When reinstalling the analyzer boards, insure they are in proper order. Refer to the Analyzer Board Jumper Configuration on page 4-36.



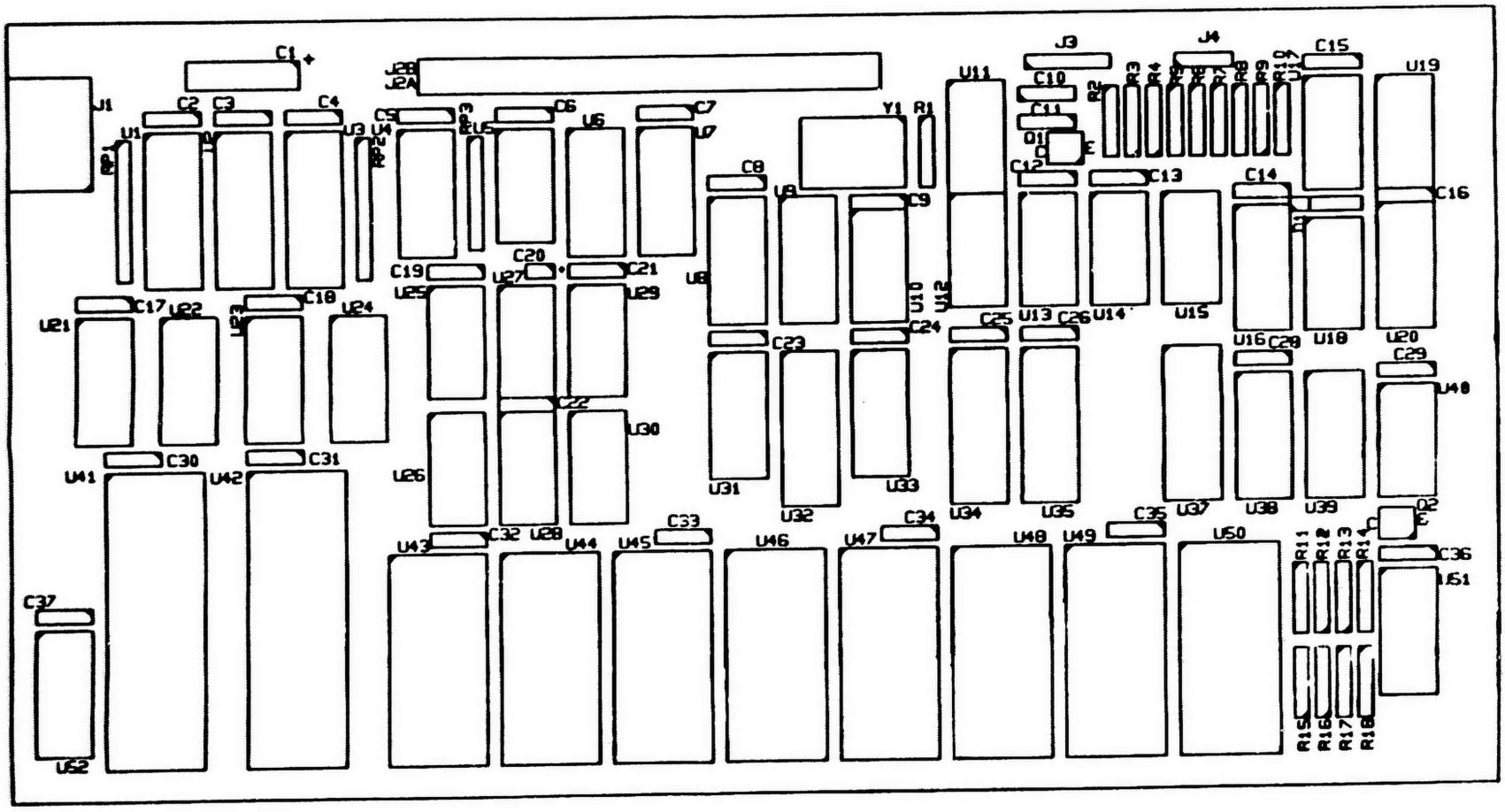
CONTROLLER BOARD

Parts on back of board:
R 14, D 6



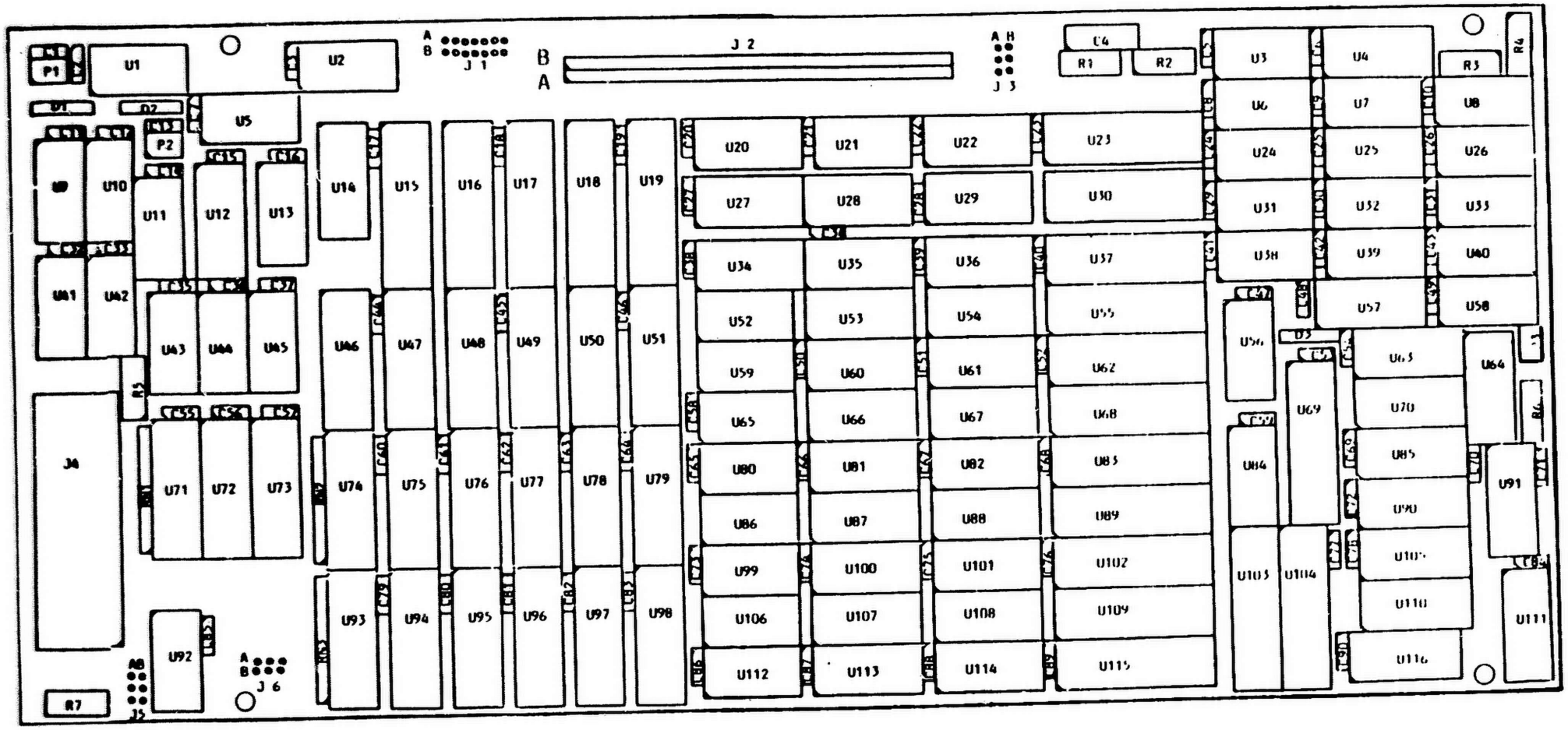
CONTROLLER BOARD

671-0048-02



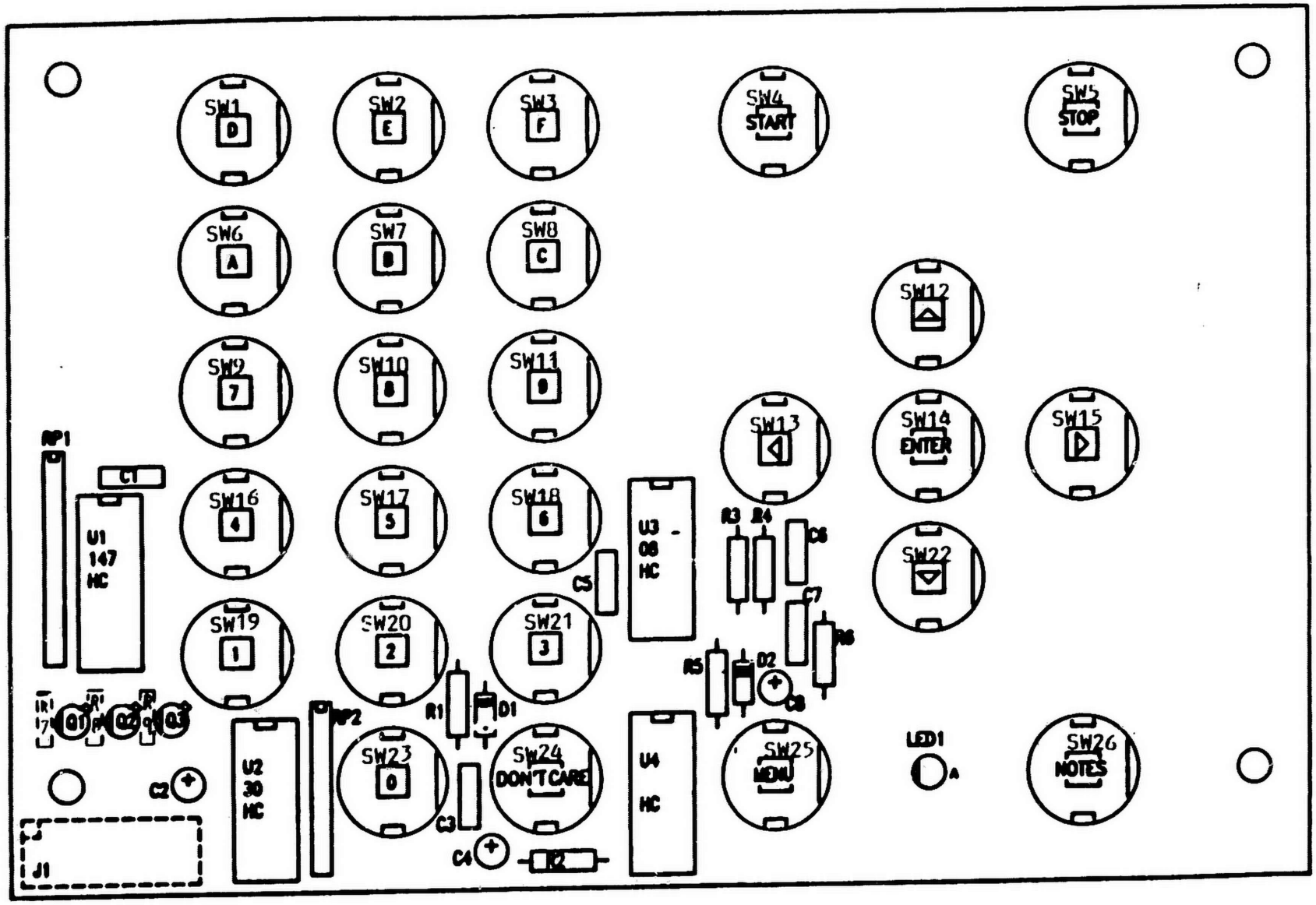
VIDEO BOARD

(671-0046-04 has parts on back of board: D2, D3, D4)

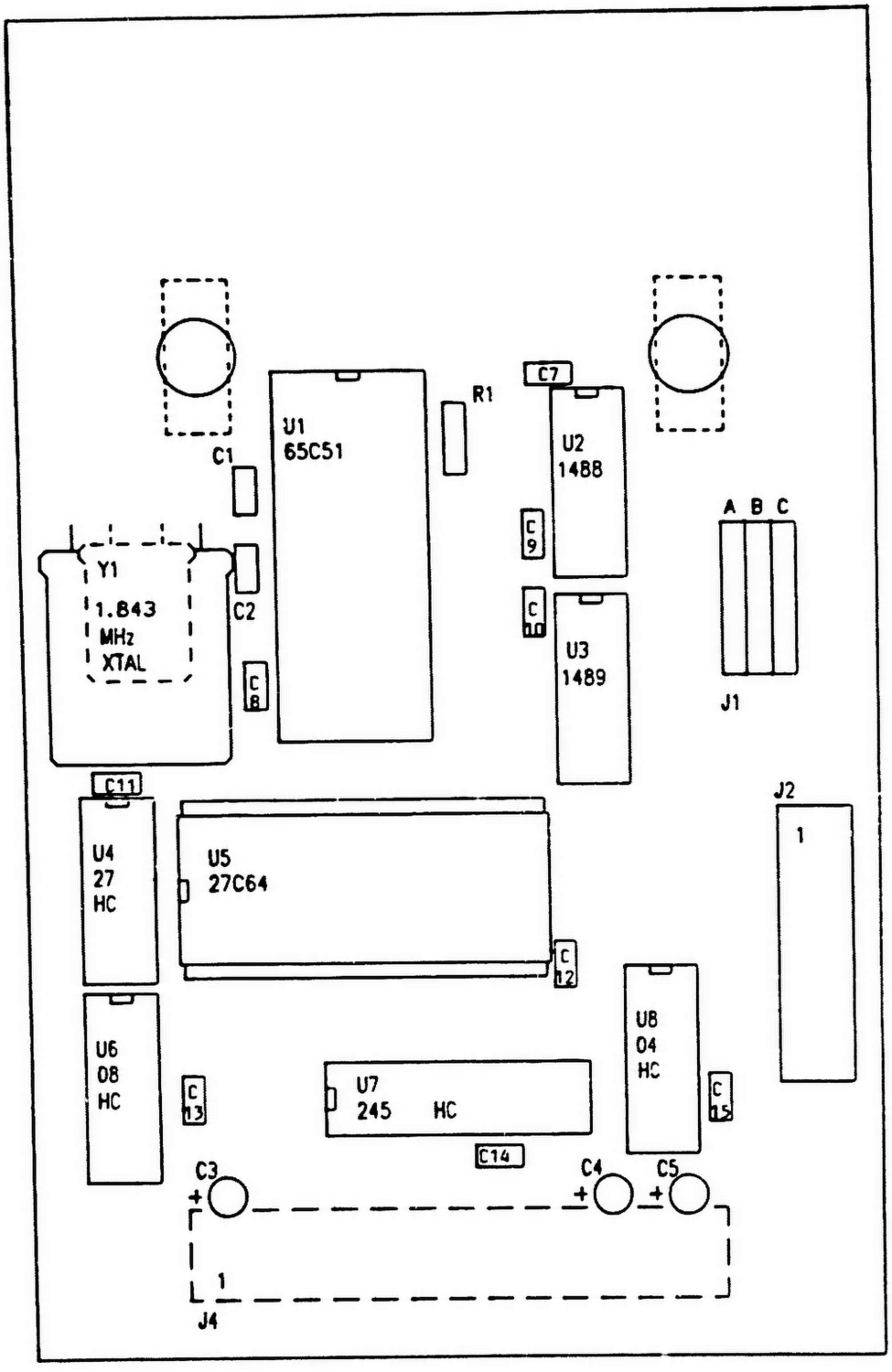


ANALYZER BOARD

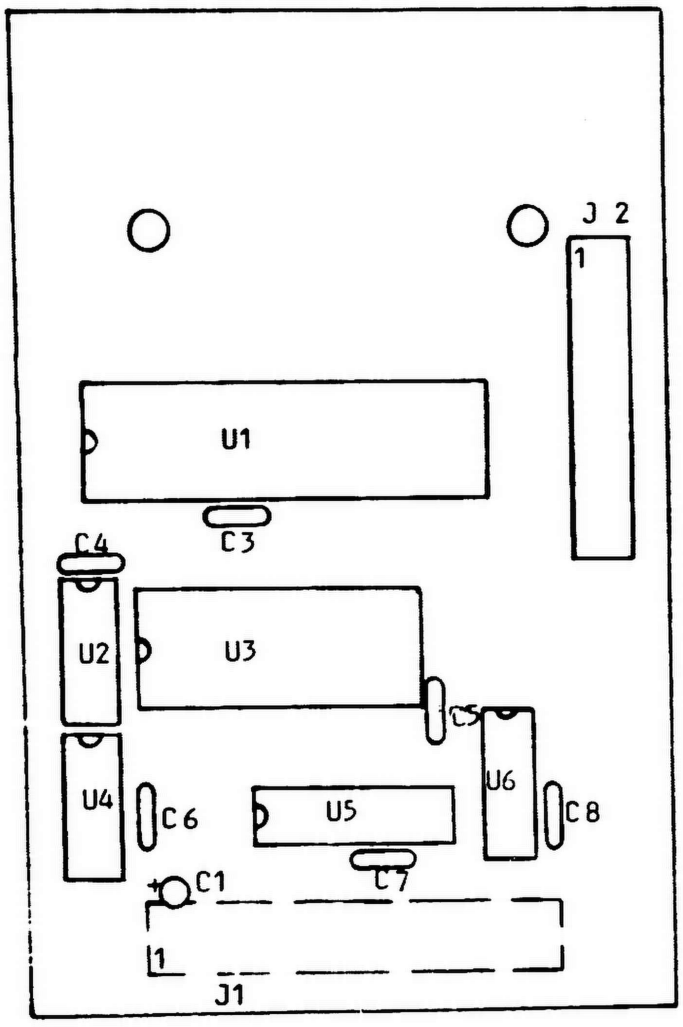
Parts on back of board;
R 10, R11, C91



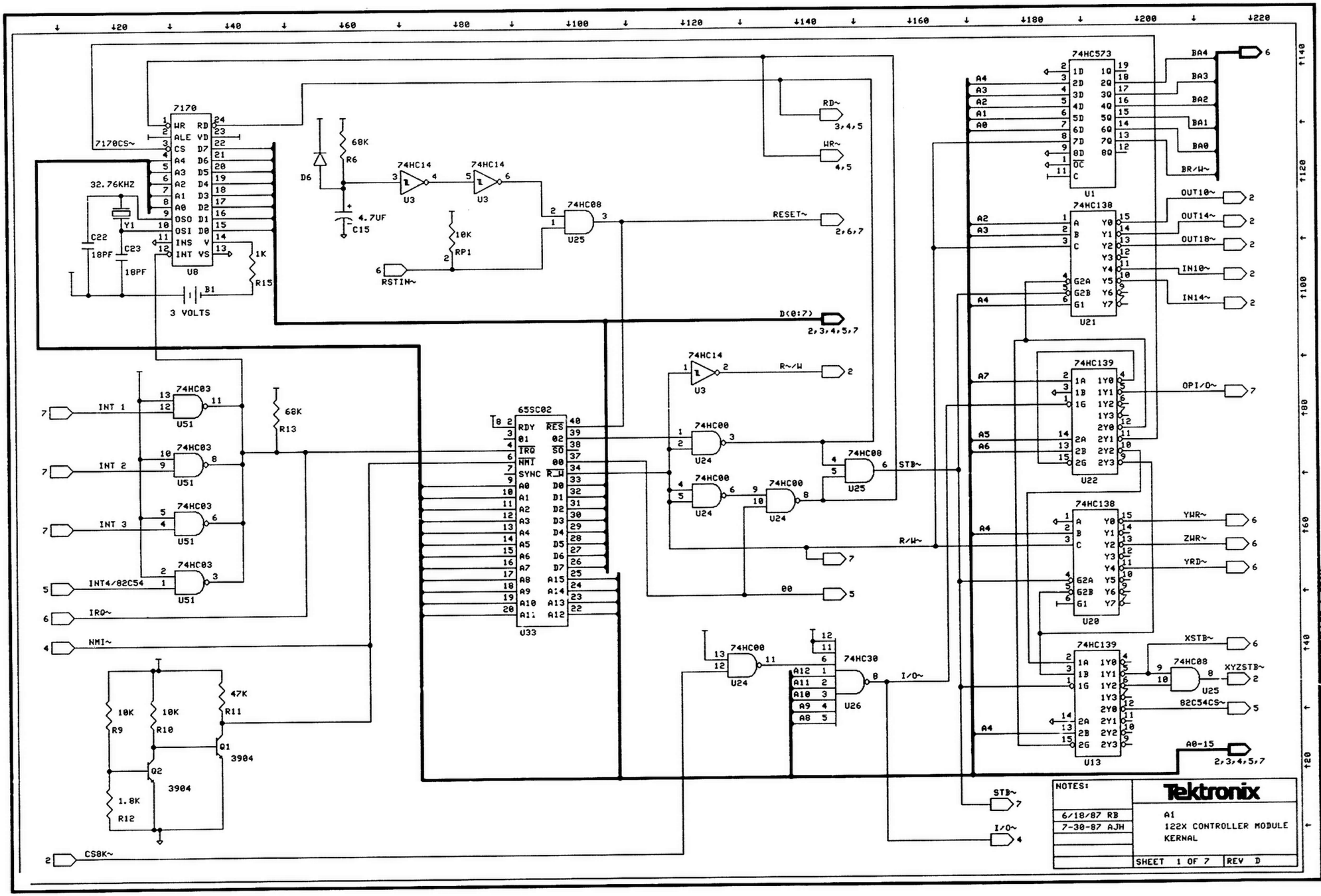
KEYPAD BOARD

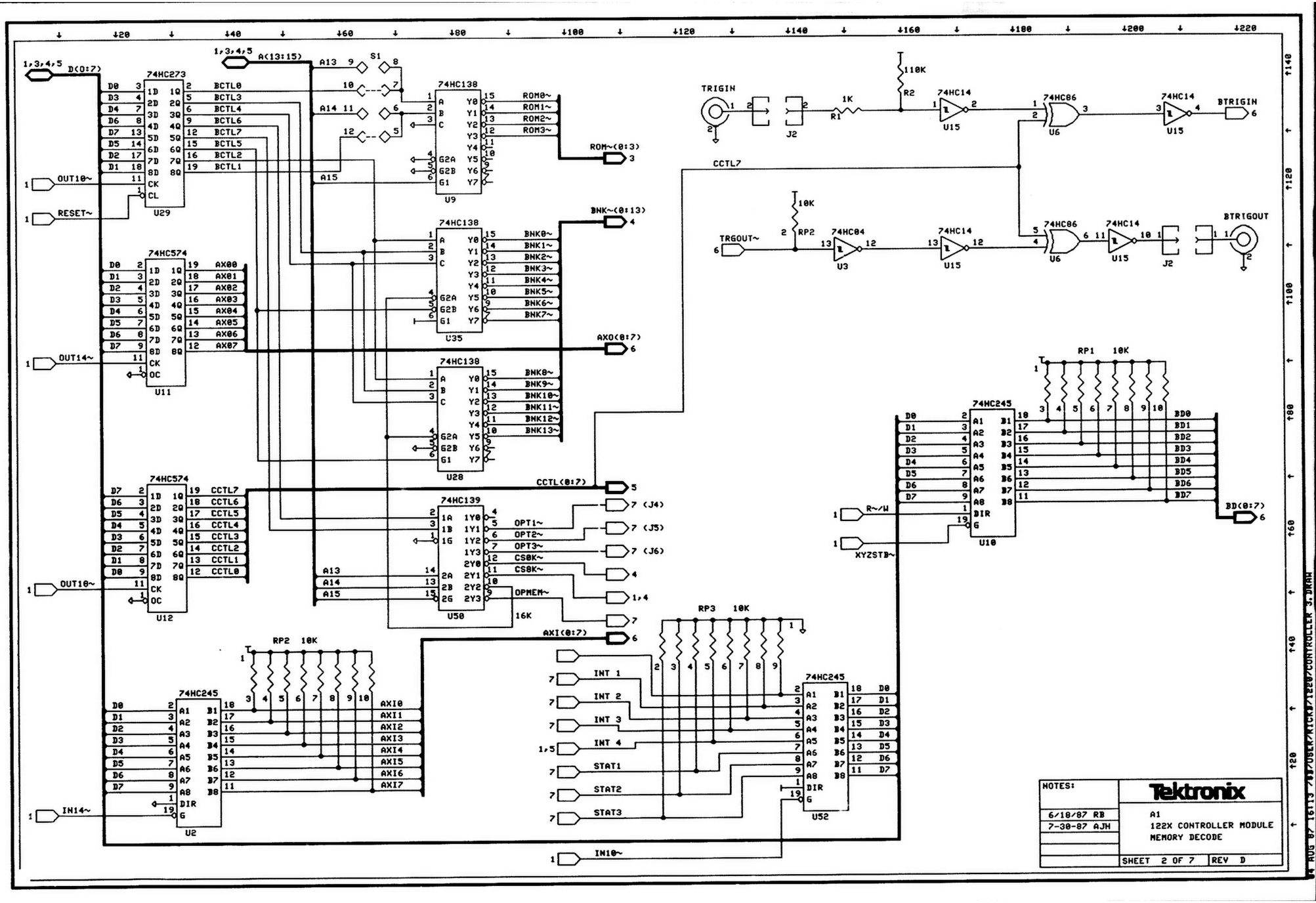


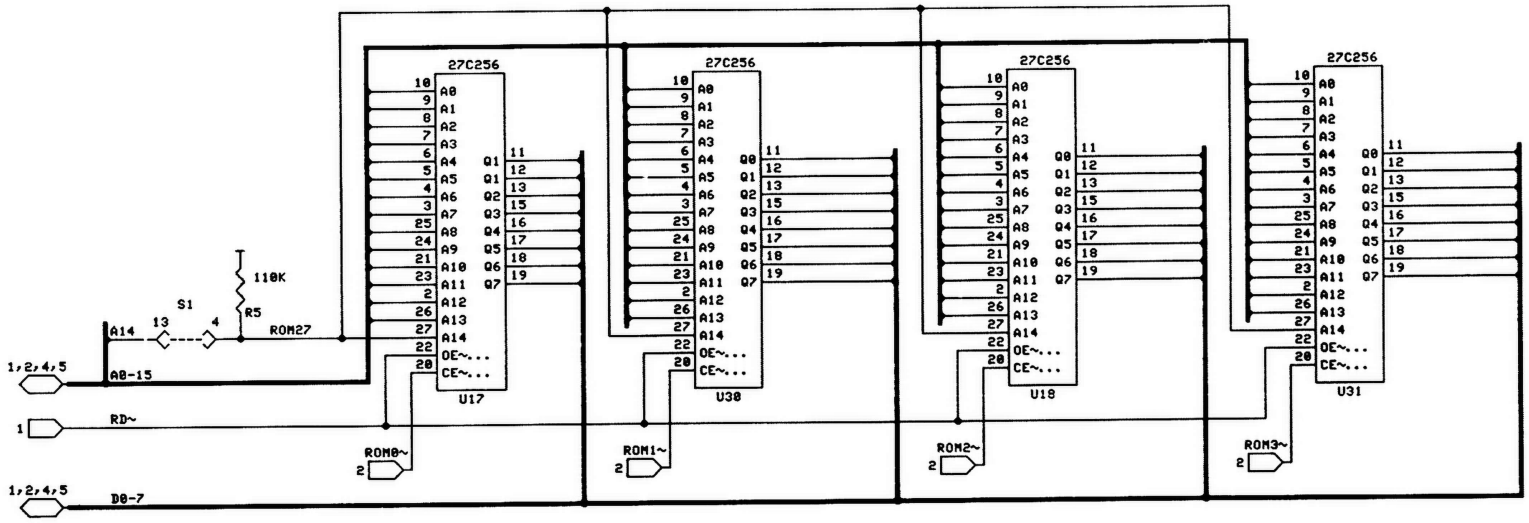
RS 232 INTERFACE BOARD



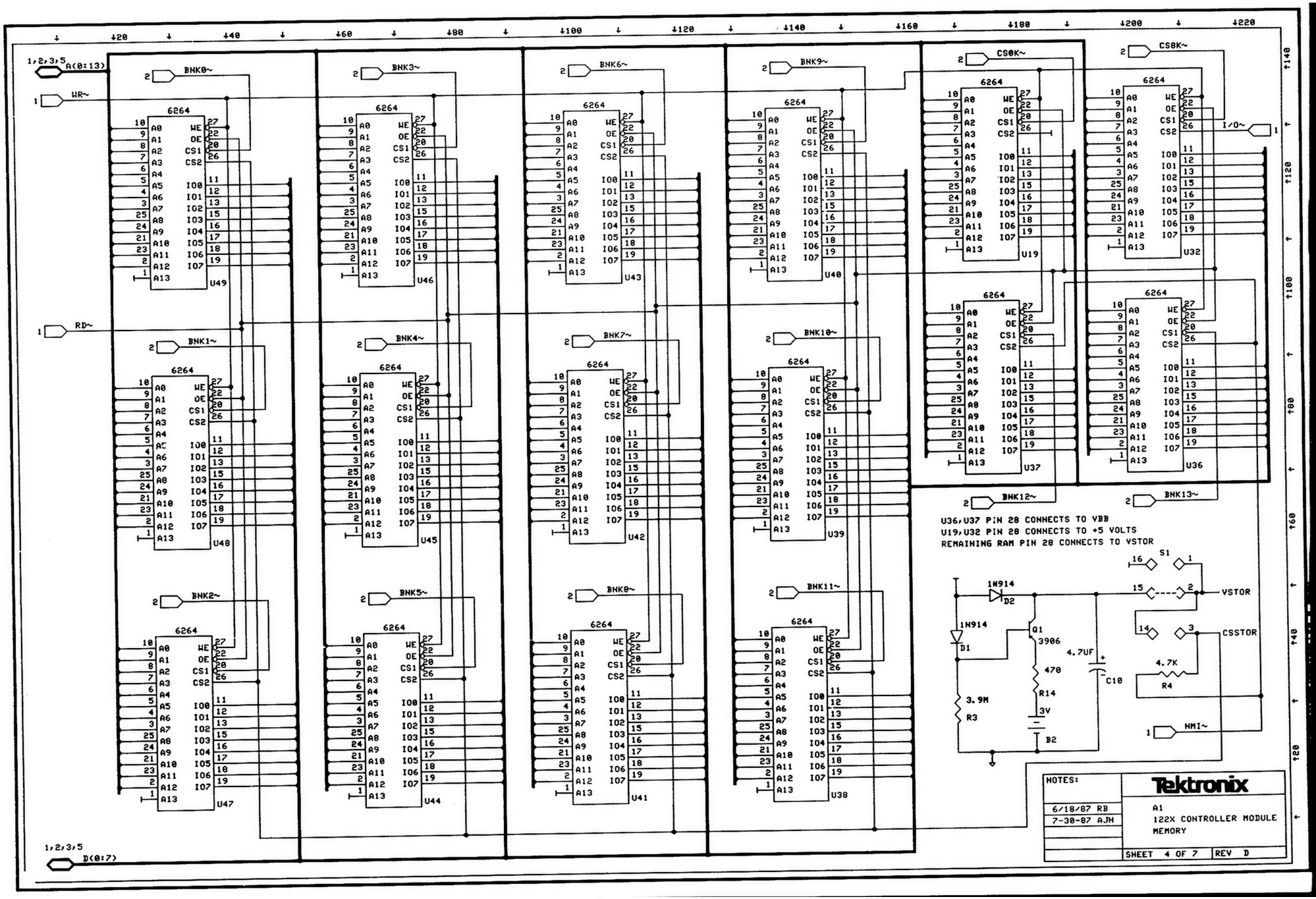
PRINTER BOARD

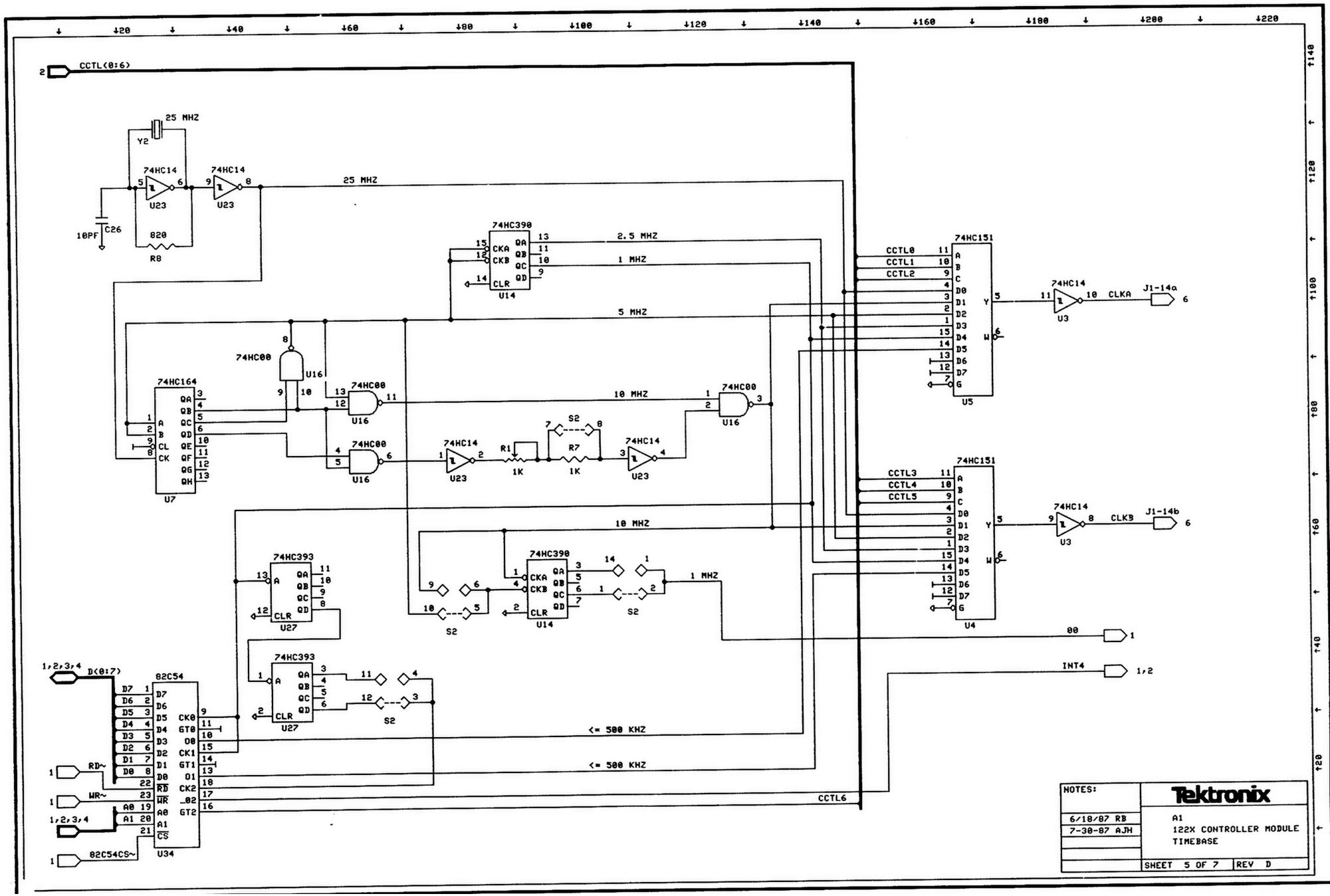


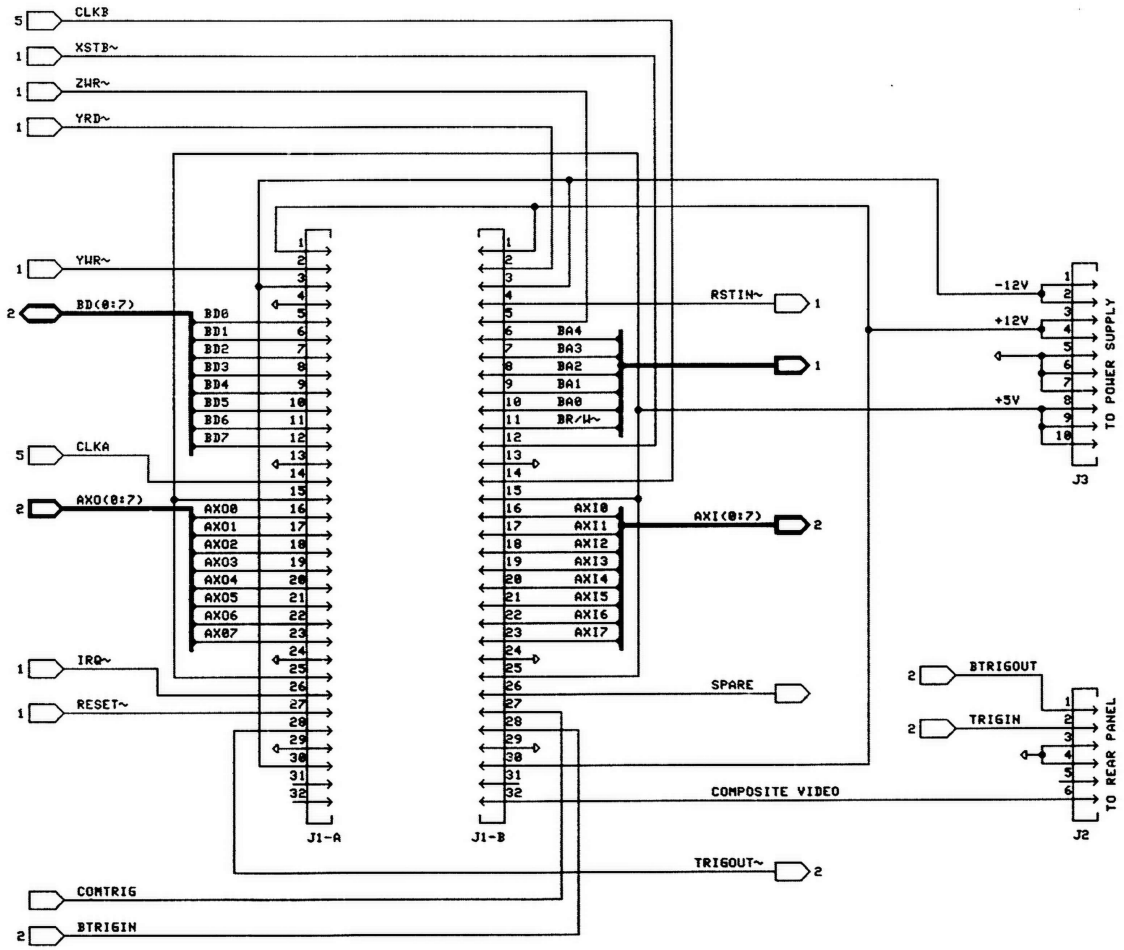




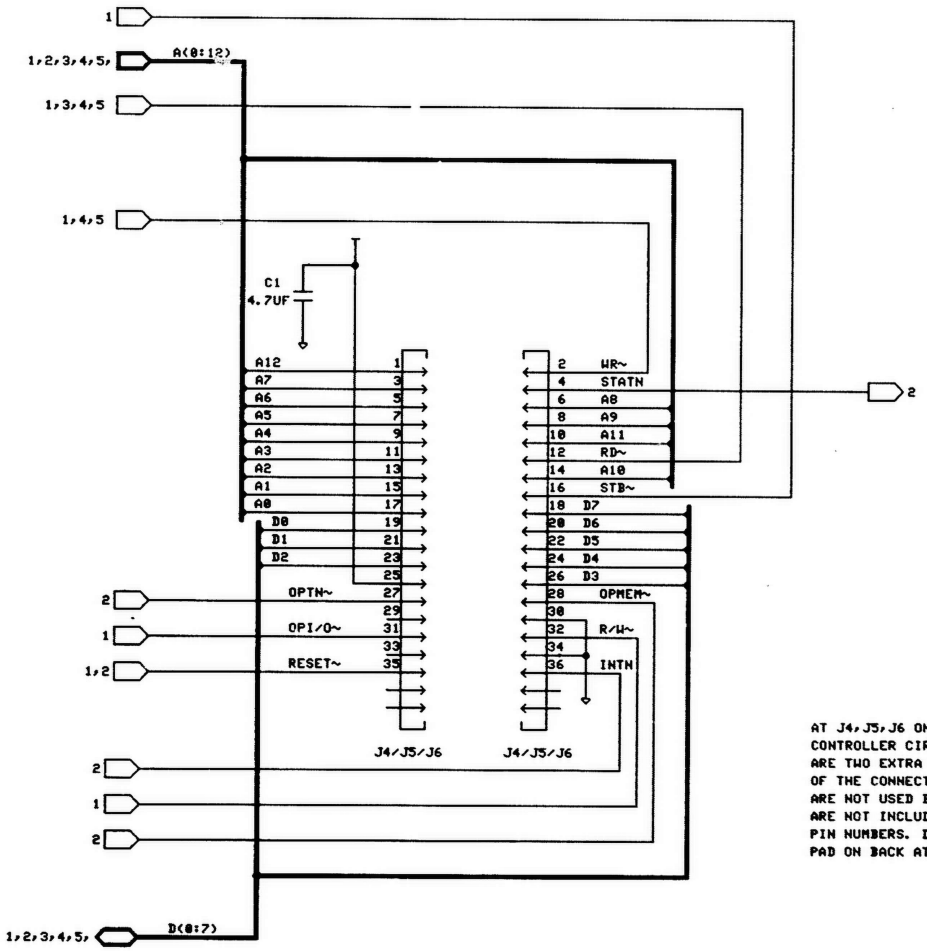
NOTES:	Tektronix
6/18/87 RB	A1
7-30-87 AJH	122X CONTROLLER MODULE
	ROM
	SHEET 3 OF 7 REV D







NOTES:	Tektronix
6/18/87 RB	A1
7-30-87 AJH	122X CONTROLLER MODULE
	MAIN INTERCONNECT
	SHEET 6 OF 7 | REV D

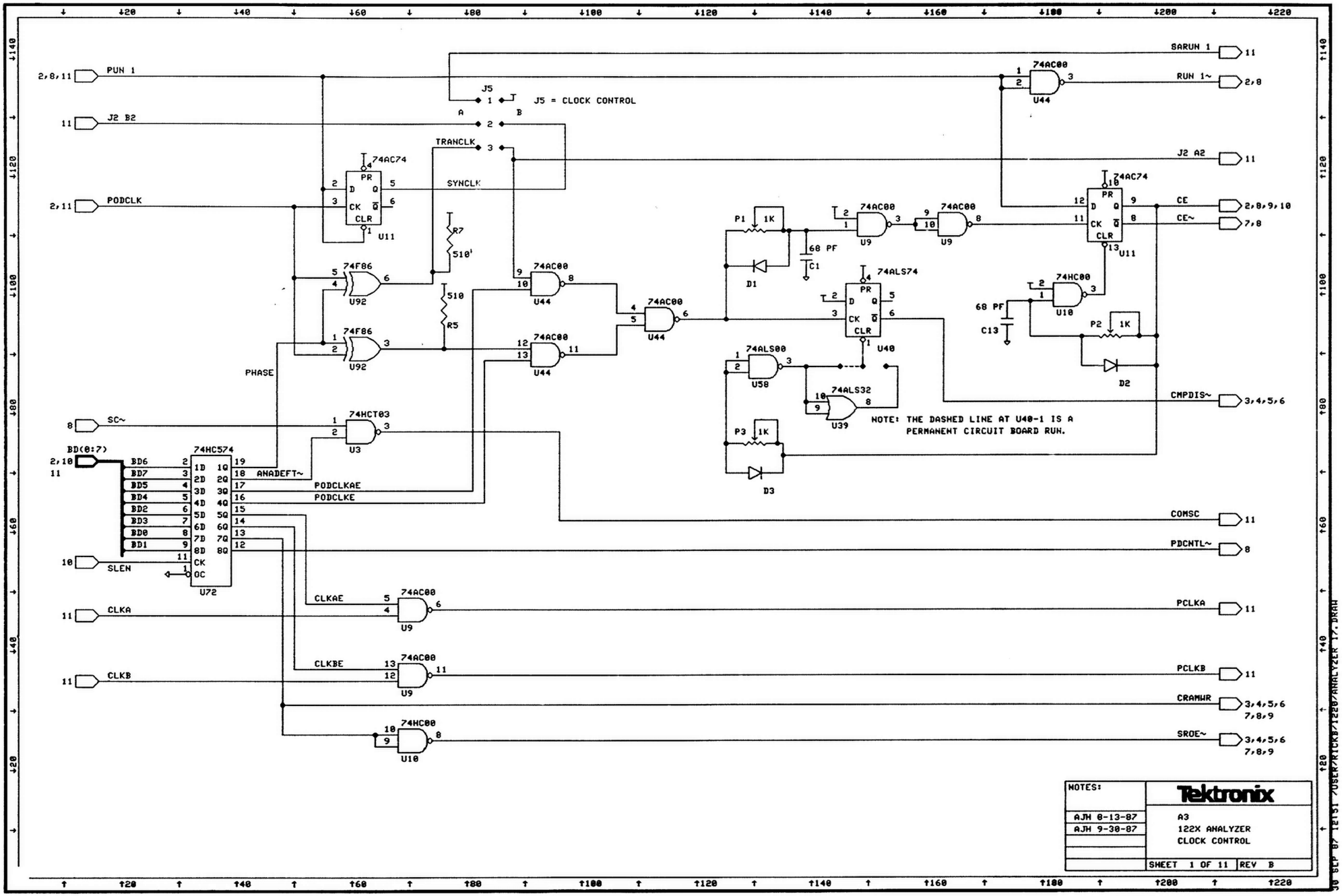


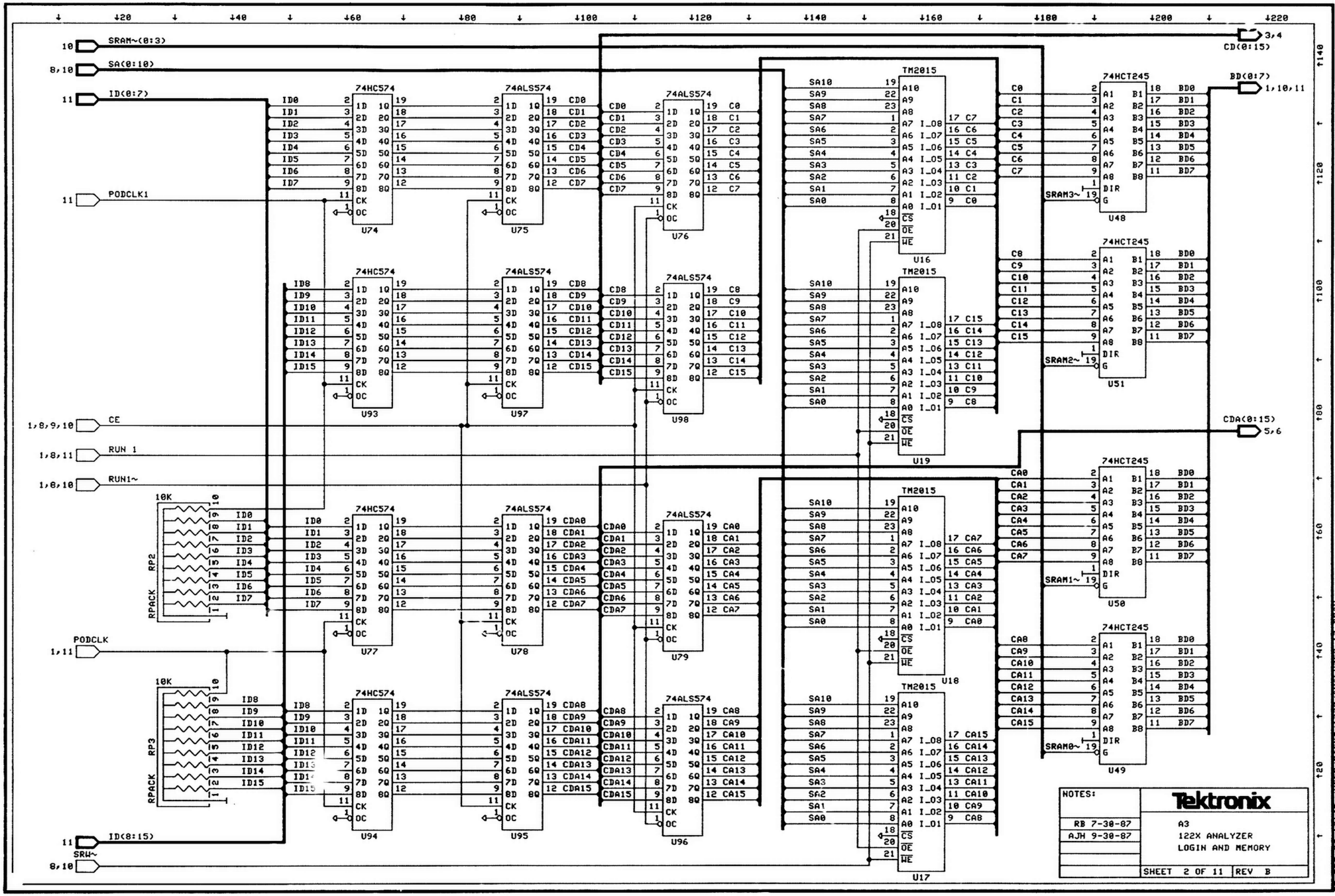
NOTE: N FOR OPTN~, STATN, AND INTN

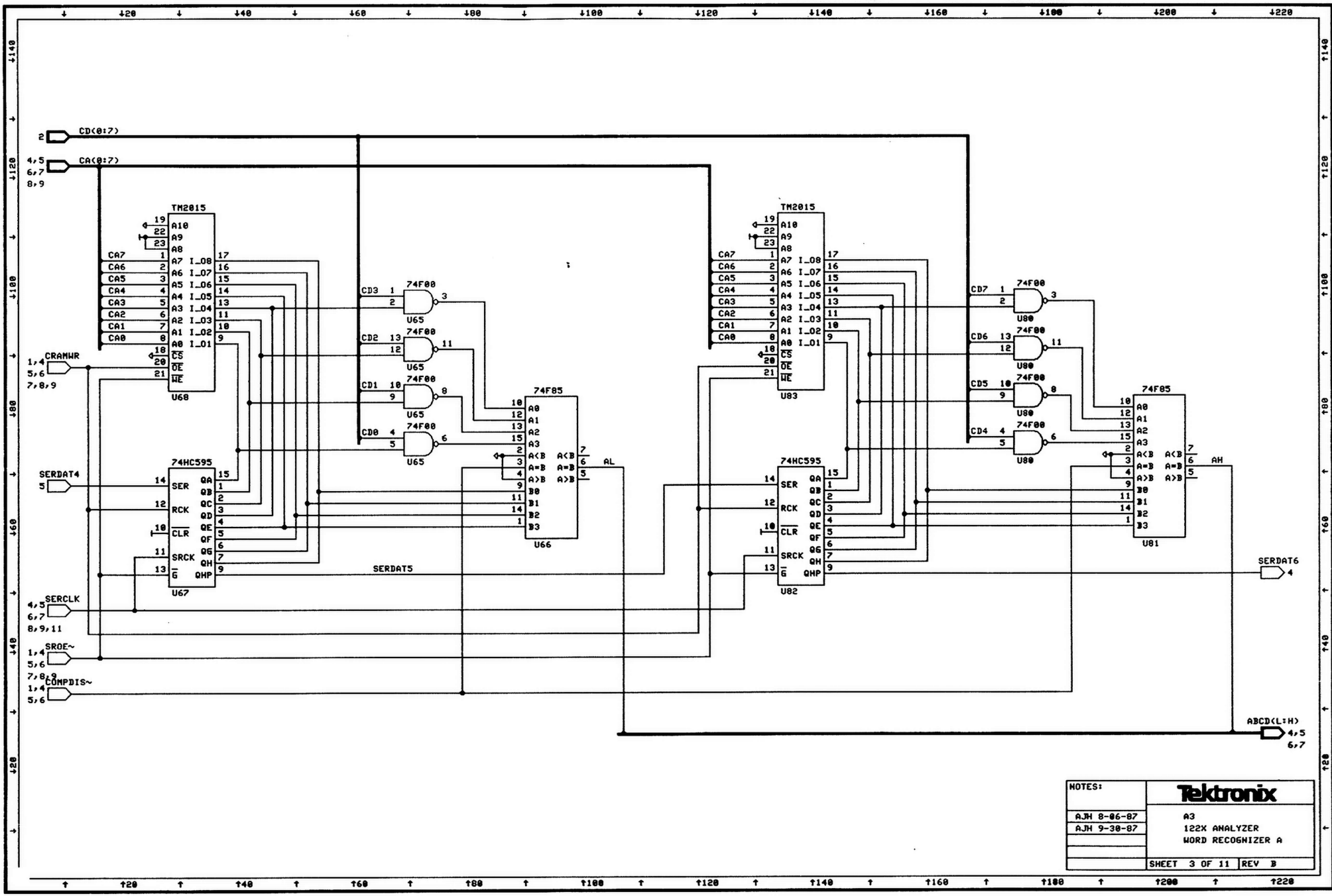
J4 = 1
J5 = 2
J6 = 3

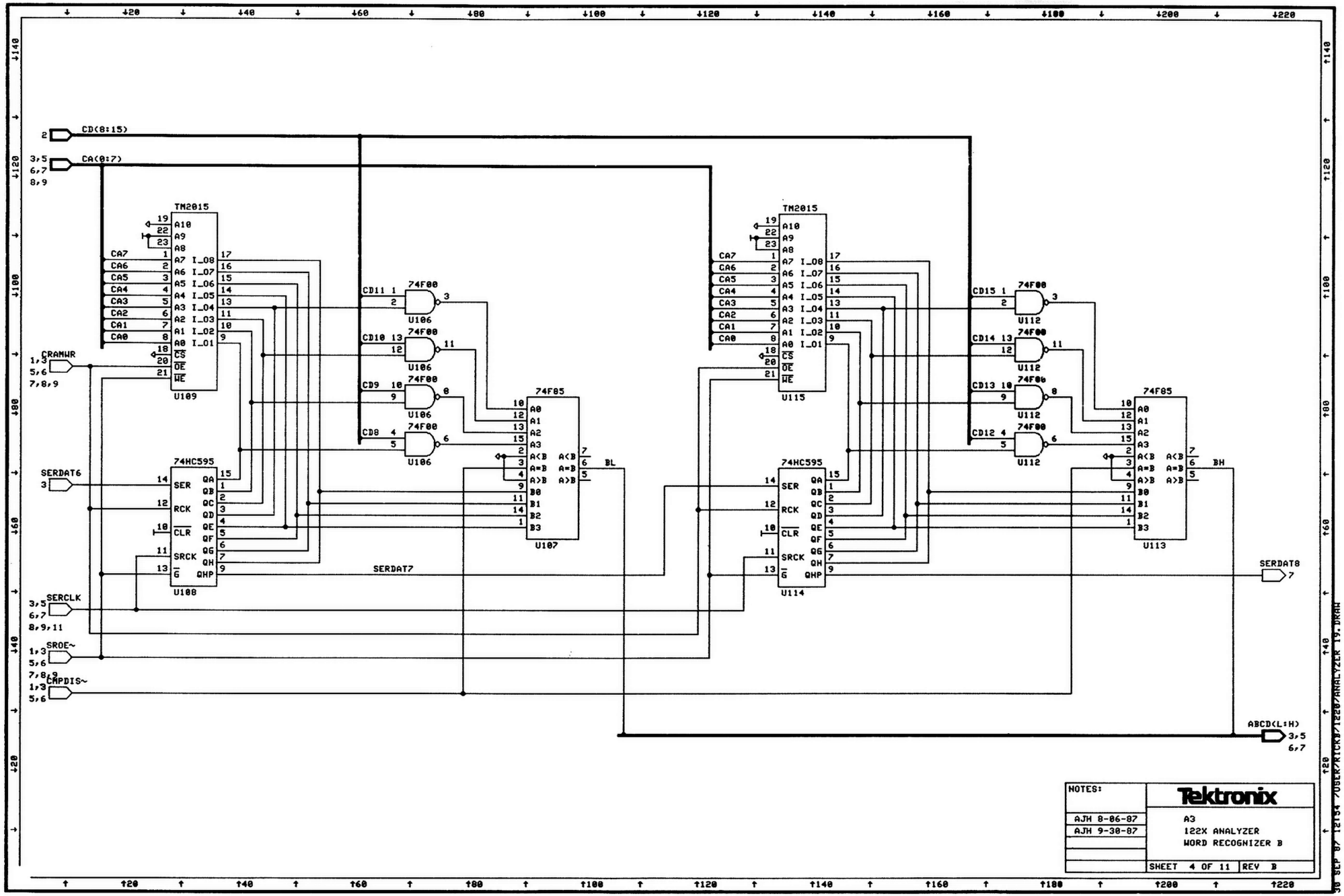
AT J4, J5, J6 ON THE BACK OF THE CONTROLLER CIRCUIT BOARD, THERE ARE TWO EXTRA HOLES BY EACH END OF THE CONNECTOR. THESE HOLES ARE NOT USED BY J4, J5, J6, AND ARE NOT INCLUDED WHEN COUNTING PIN NUMBERS. DISREGARD THE SQUARE PAD ON BACK AT J4, J5, J6.

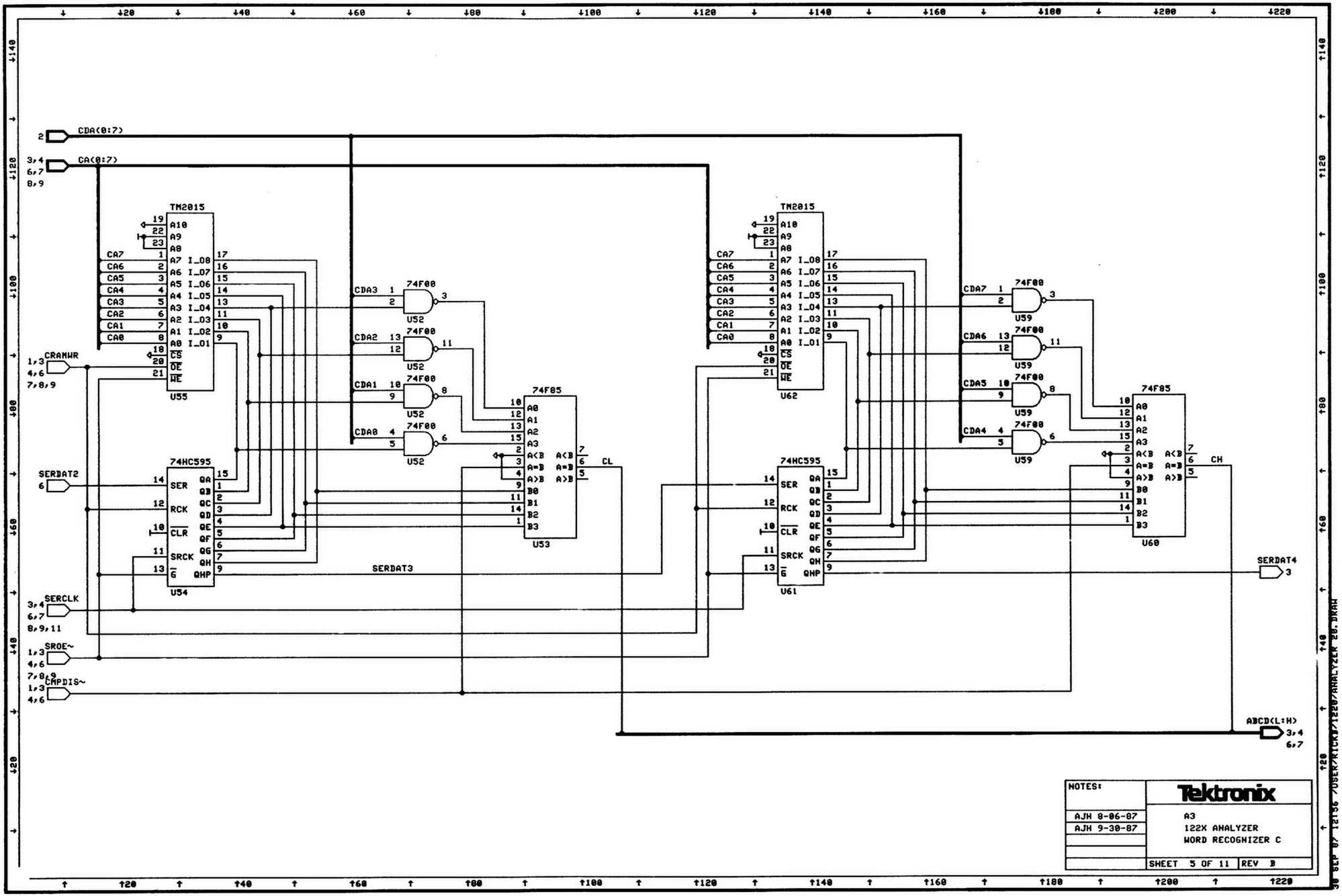
NOTES:	Tektronix
7/18/87 RB	A1
7-30-87 AJH	122X CONTROLLER
	OPTION CONNECTOR PINOUTS
	SHEET 7 OF 7 | REV D

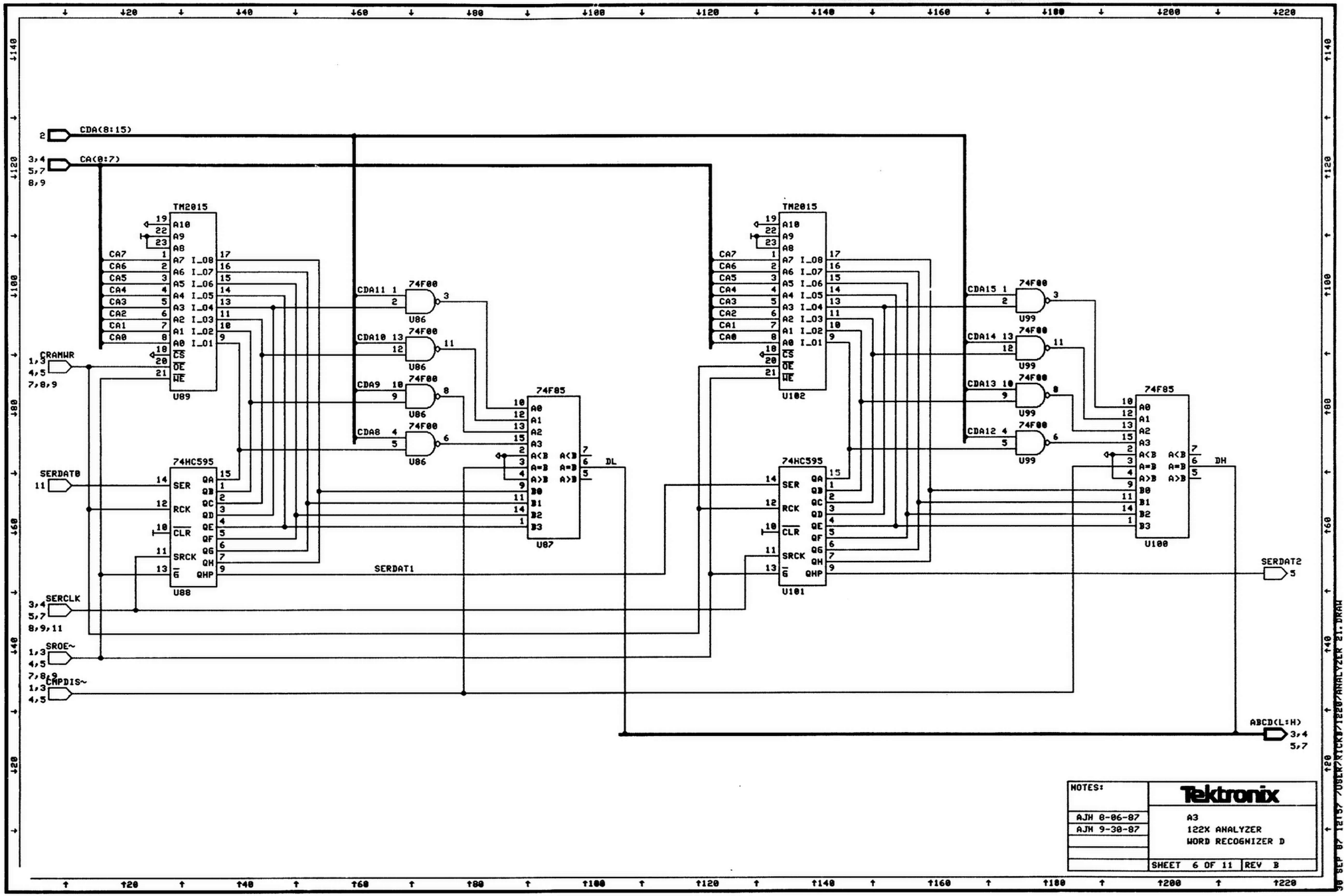


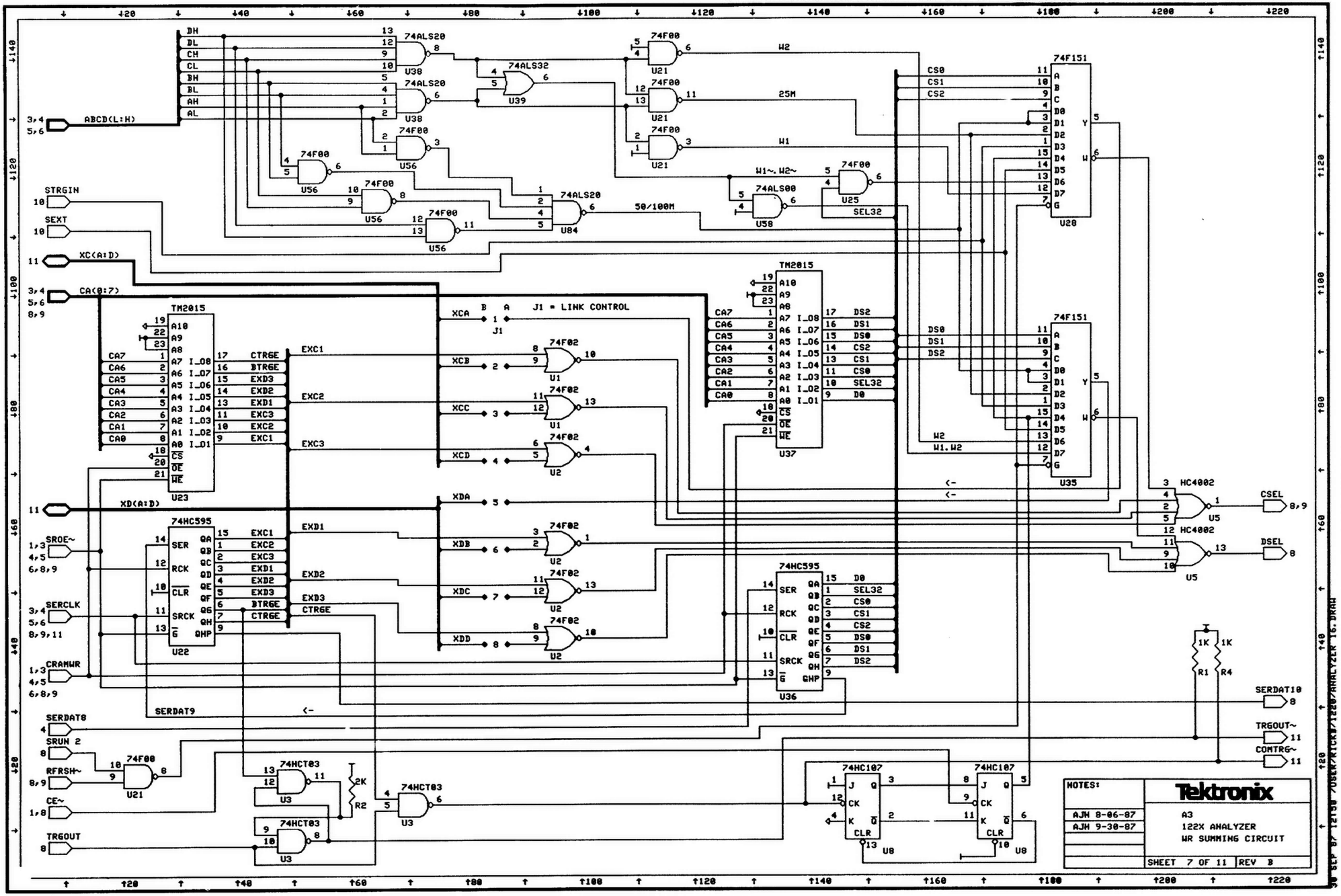












NOTES:

AJH 8-06-87

AJH 9-30-87

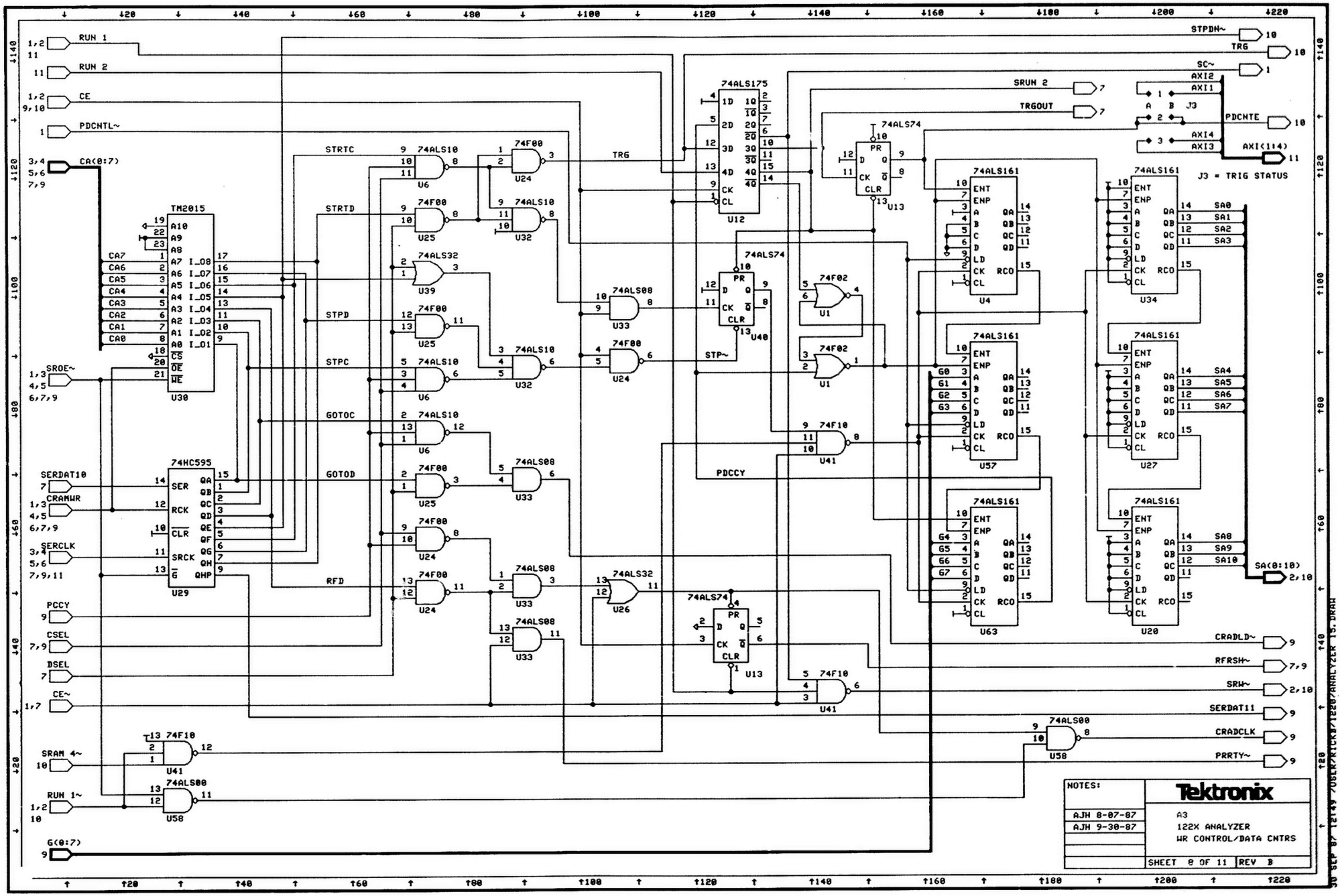
Tektronix

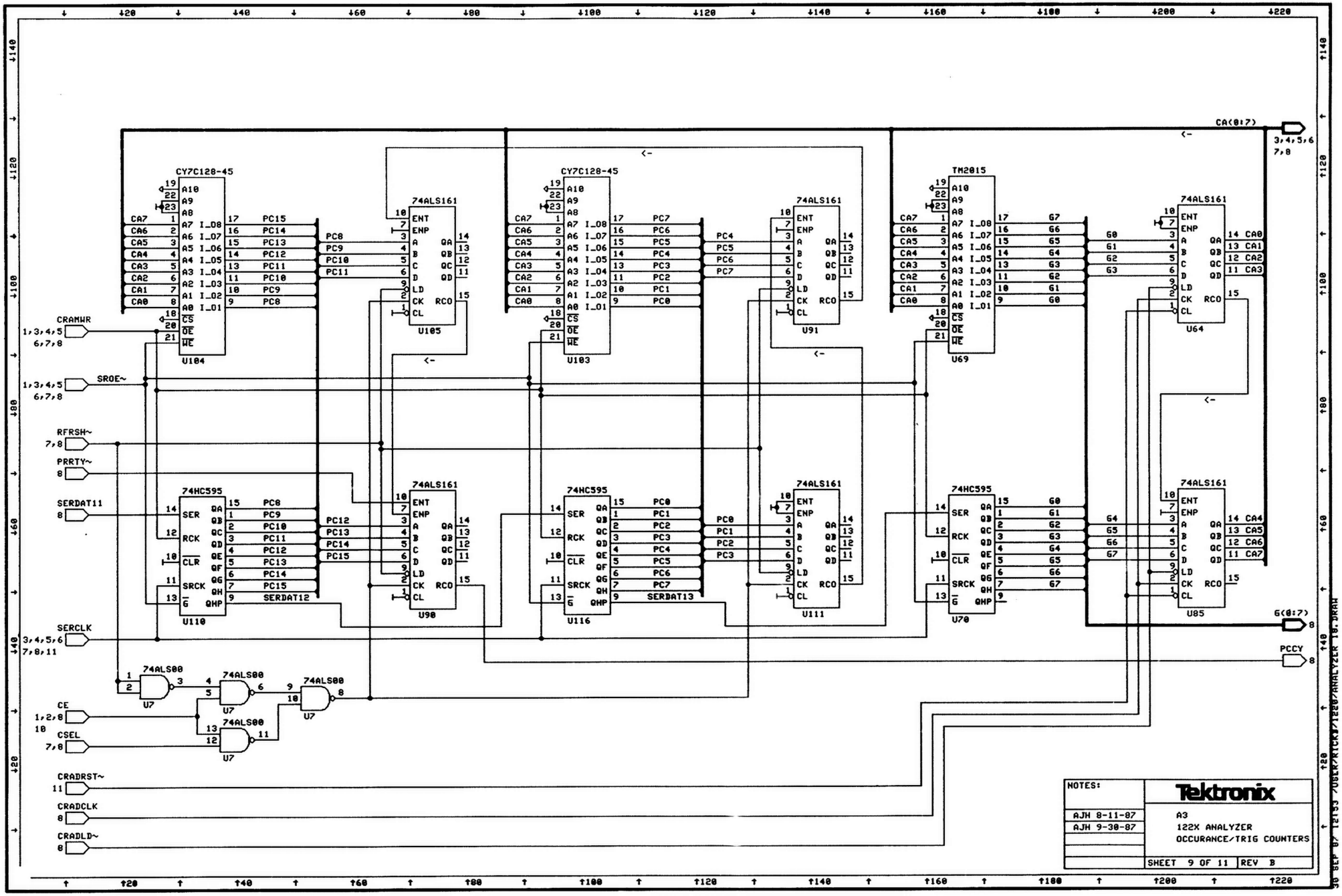
A3

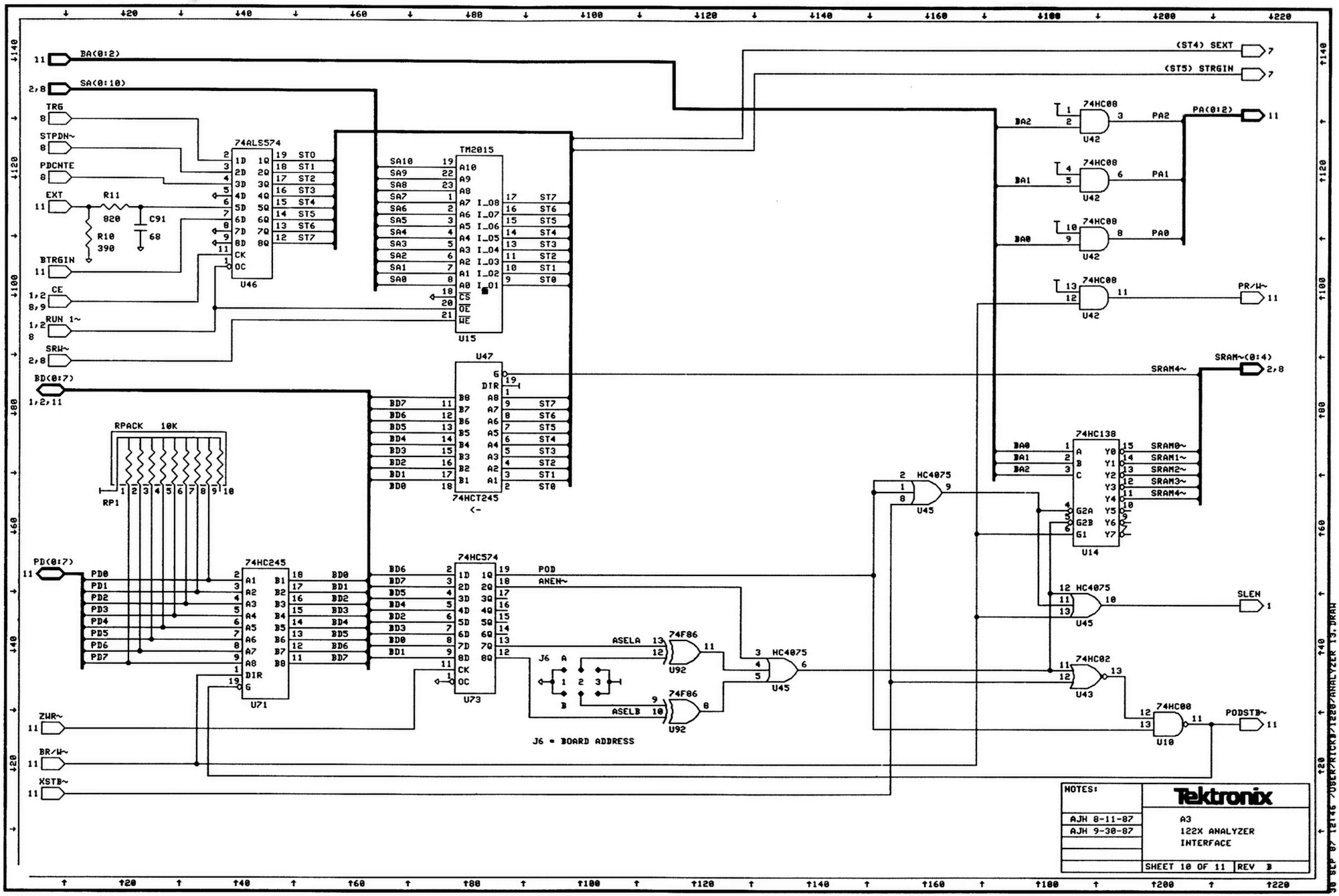
122X ANALYZER

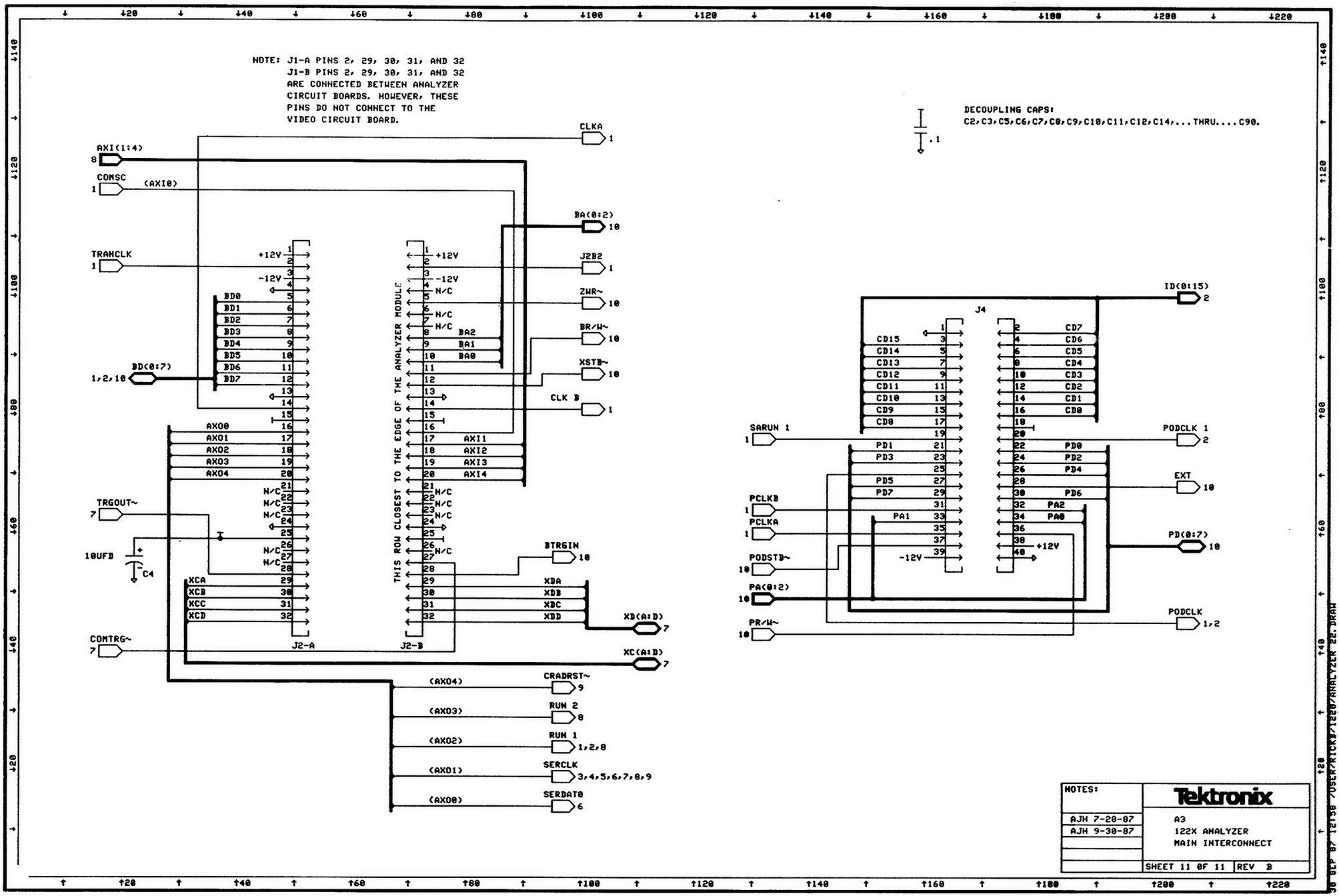
WR SUMMING CIRCUIT

SHEET 7 OF 11 | REV B



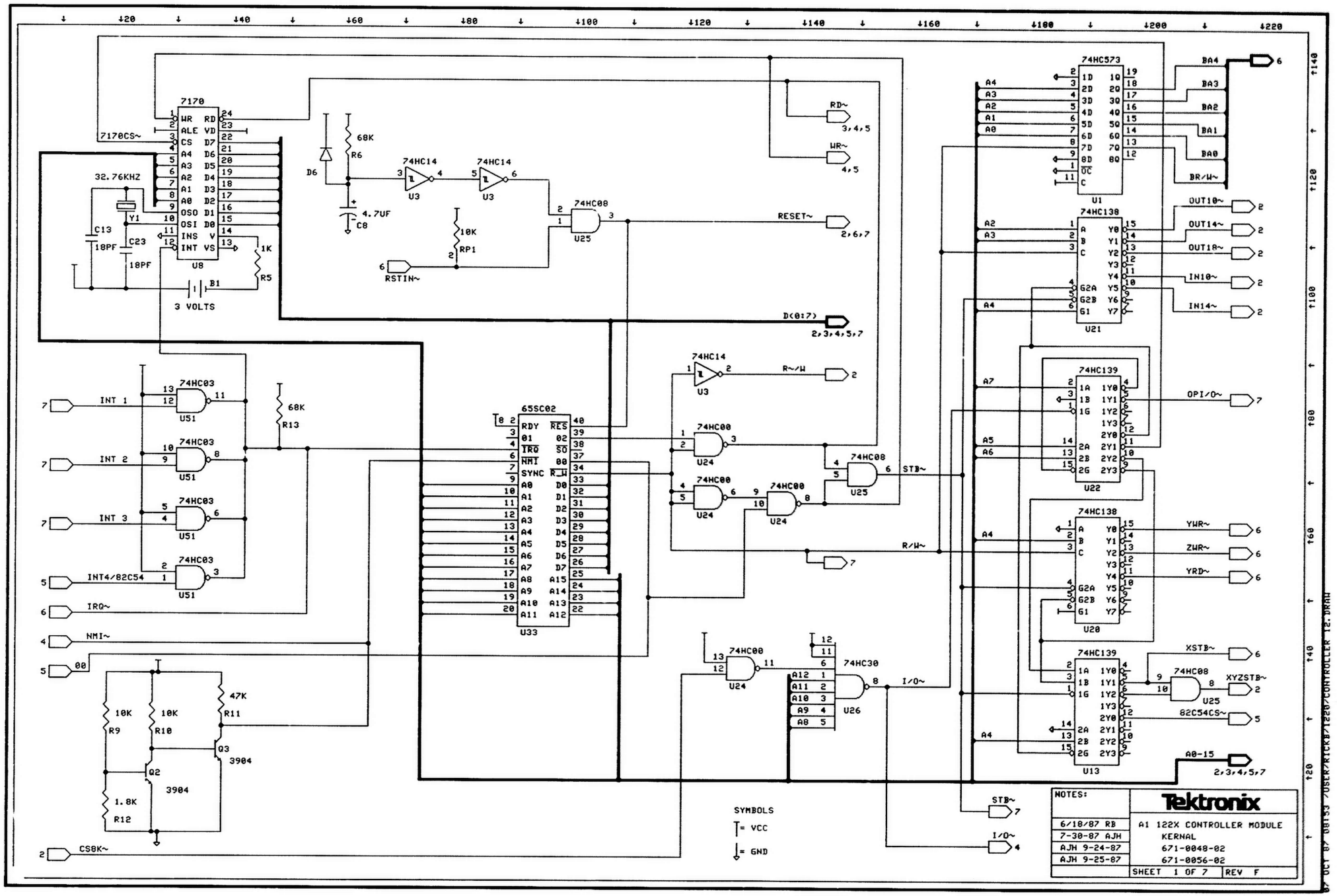


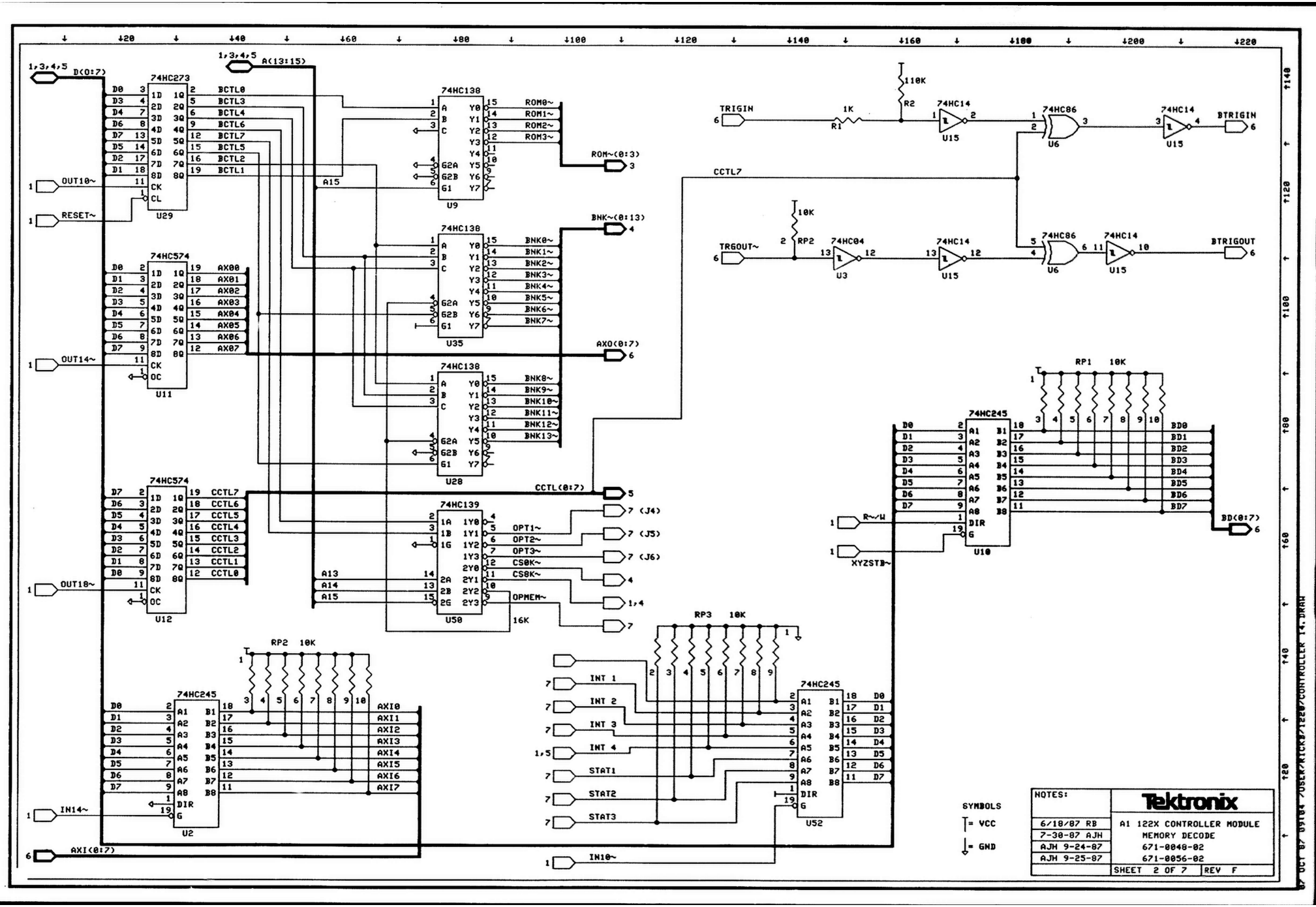


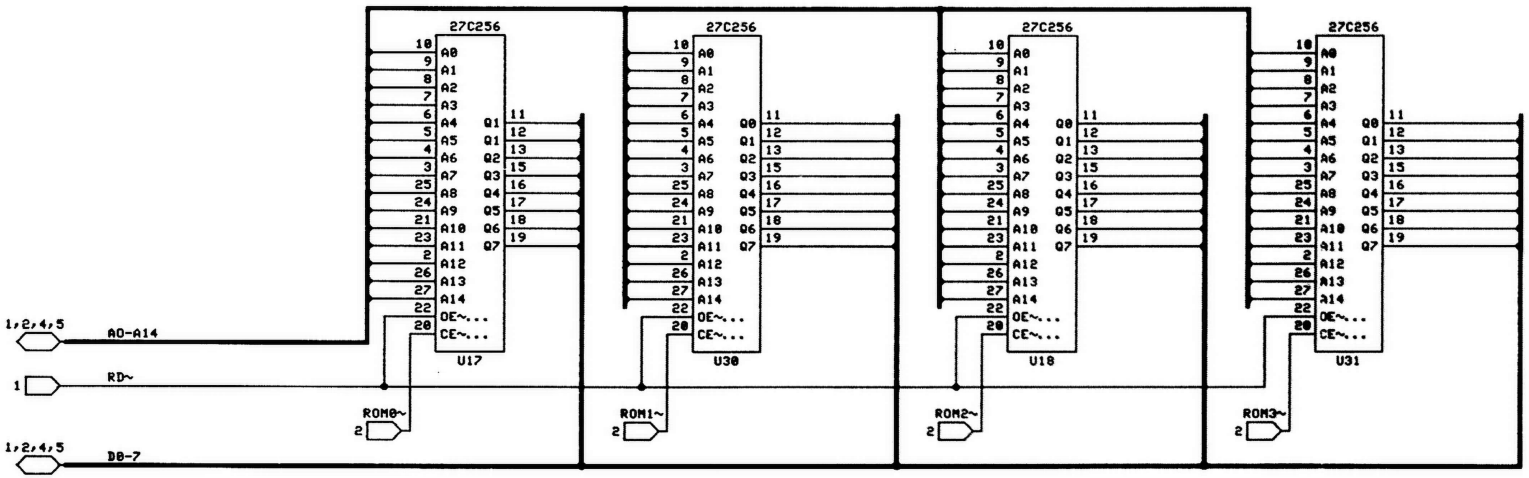


NOTES:	Tektronix
AJH 7-28-87	A3
AJH 9-30-87	122X ANALYZER
	MAIN INTERCONNECT
	SHEET 11 0F 11 | REV B

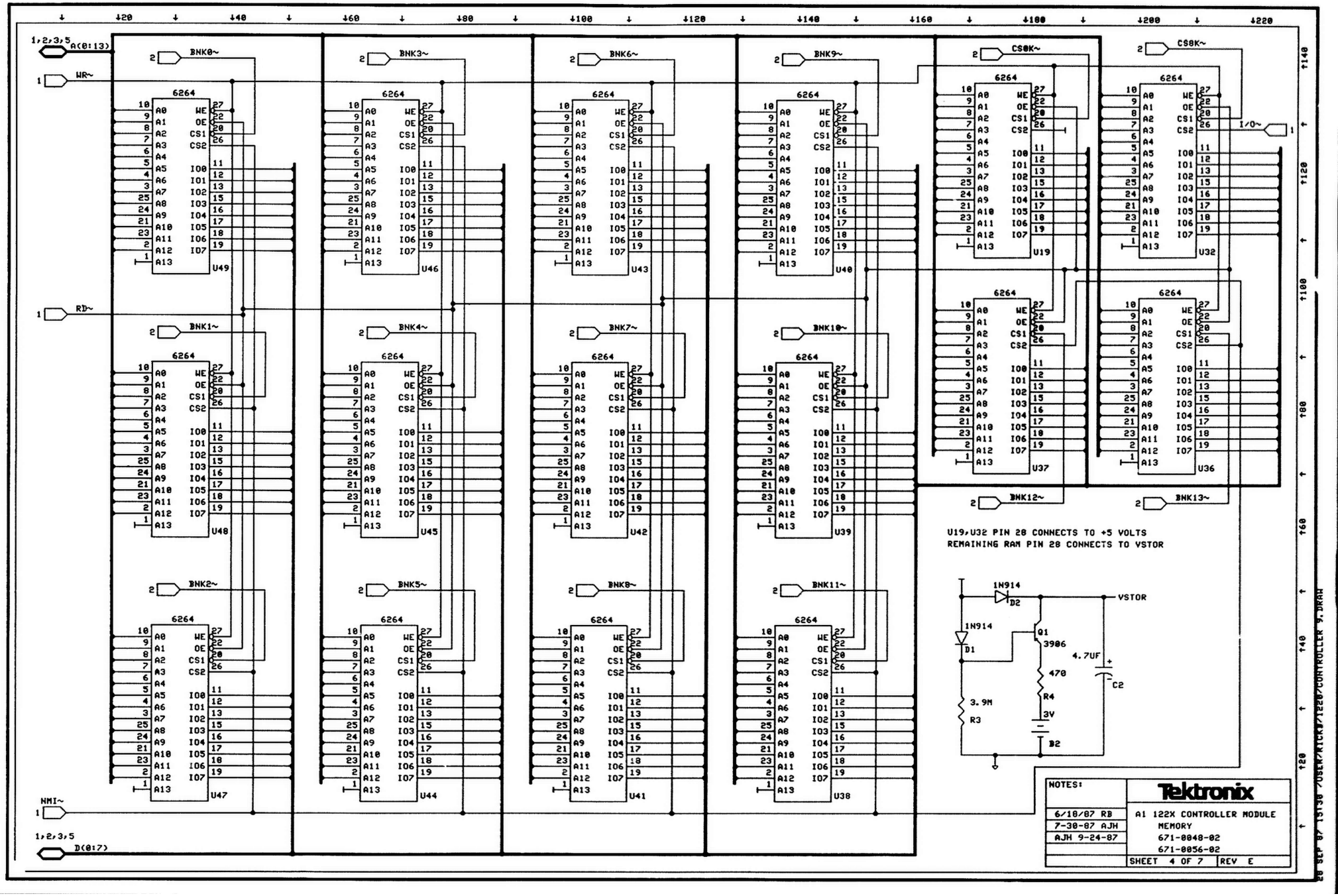
30 SEP 87 12:38 /USER/RICK/1220/ANALYZER 22.DRAW

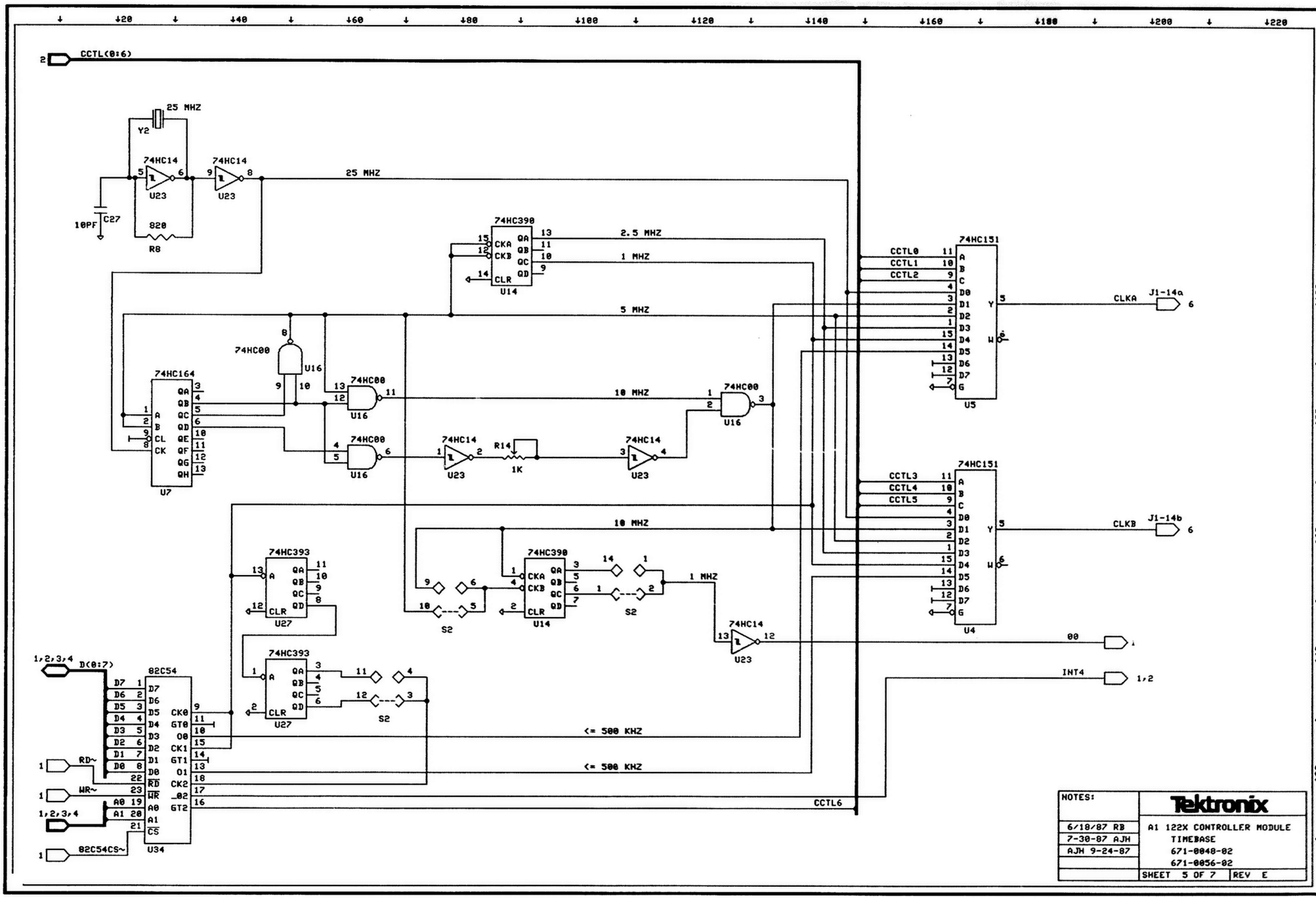


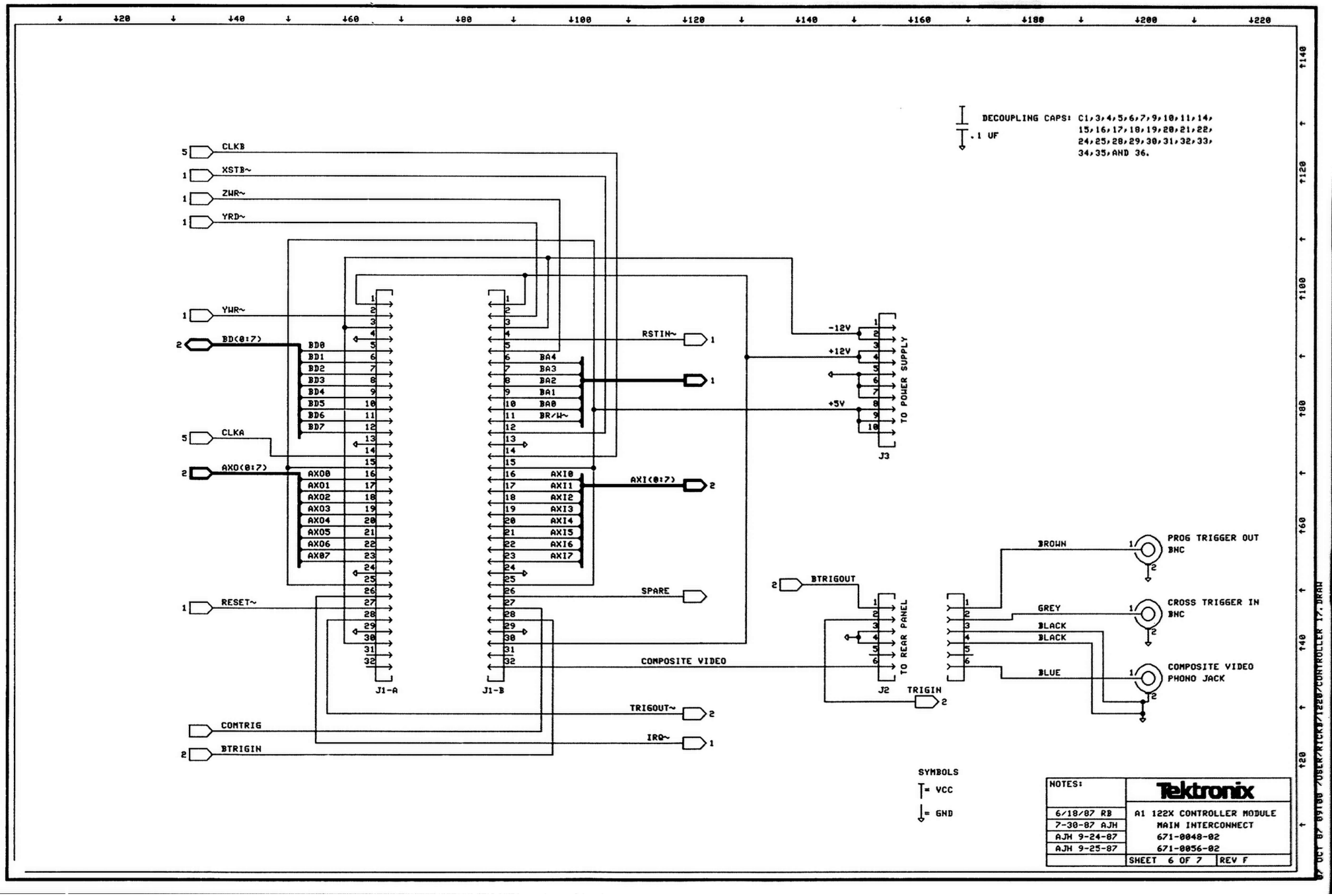


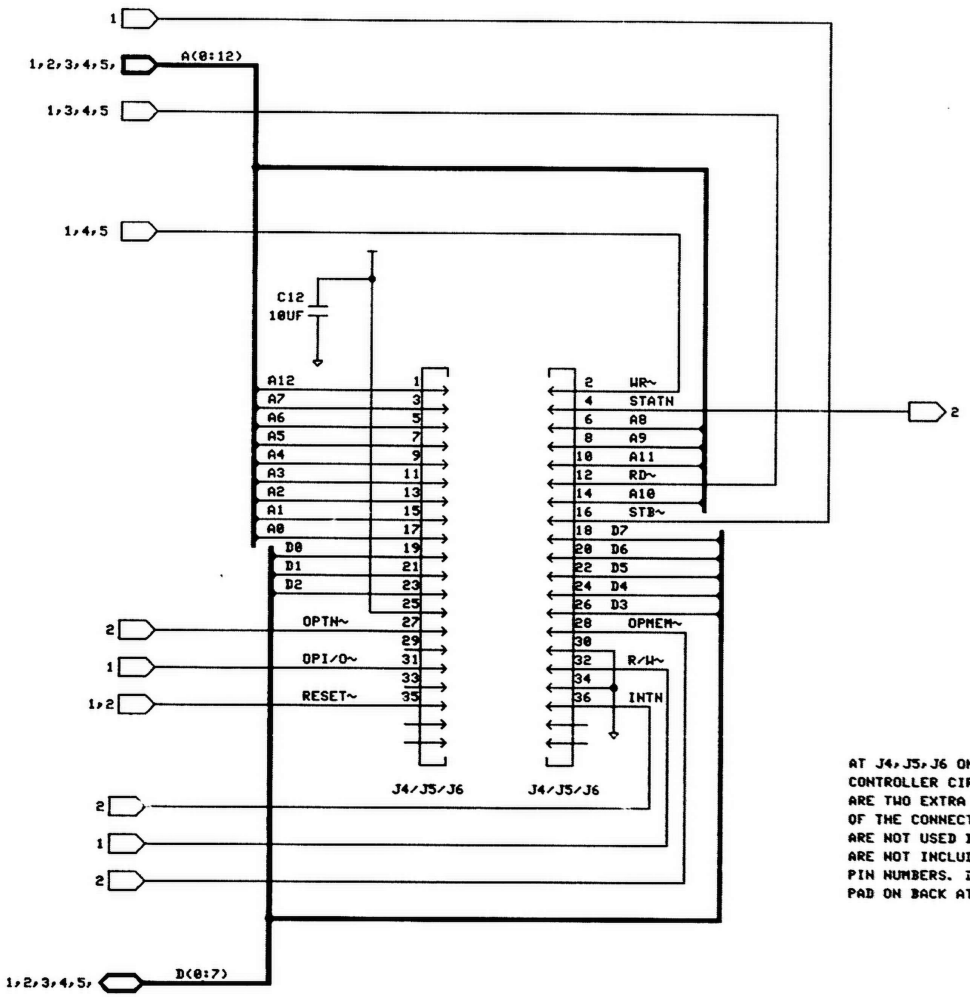


NOTES:	Tektronix
6/10/87 RB	A1 122X CONTROLLER MODULE
7-30-87 AJH	ROM
AJH 9-24-87	671-0048-02
	671-0056-02
	SHEET 3 OF 7 REV E









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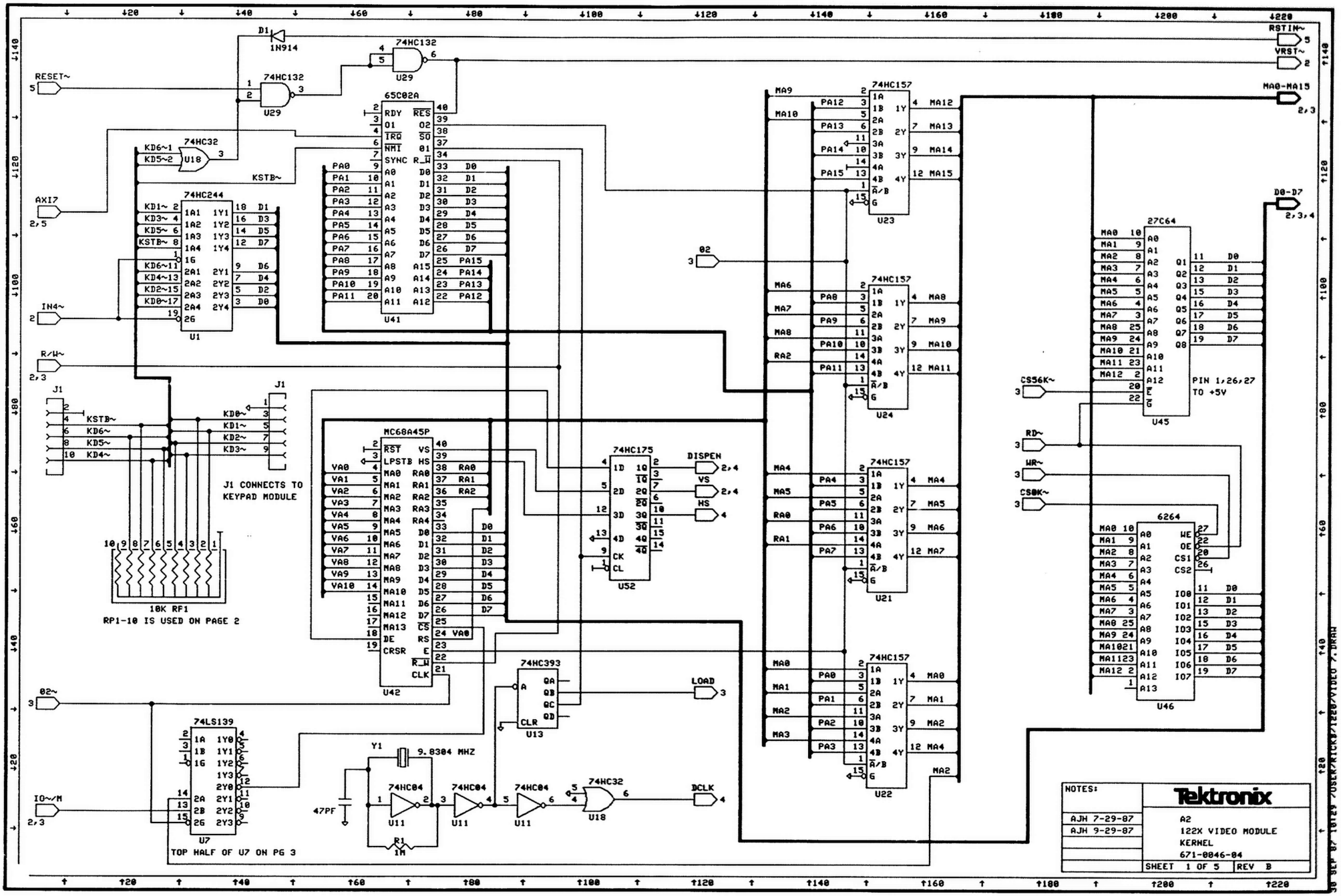
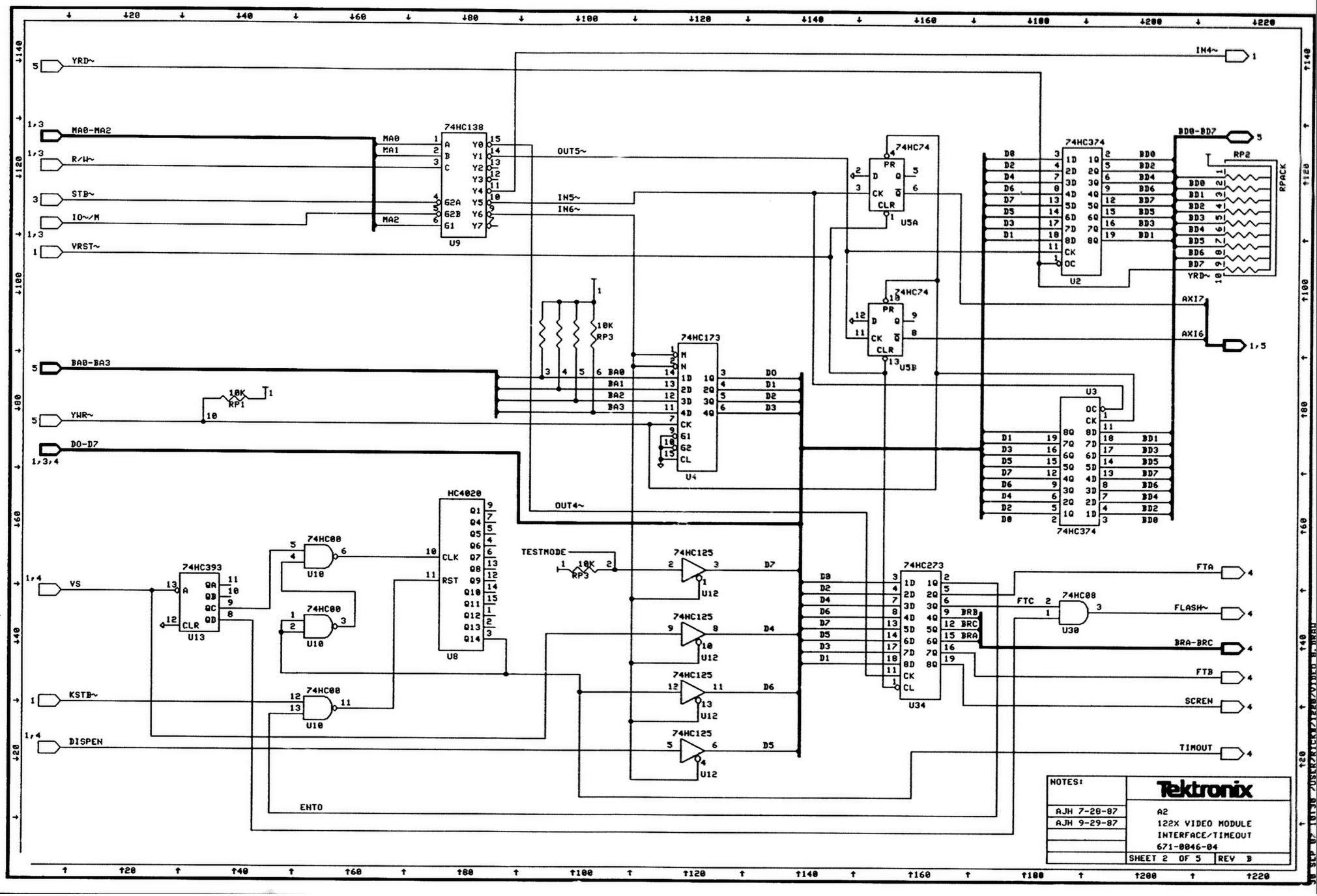
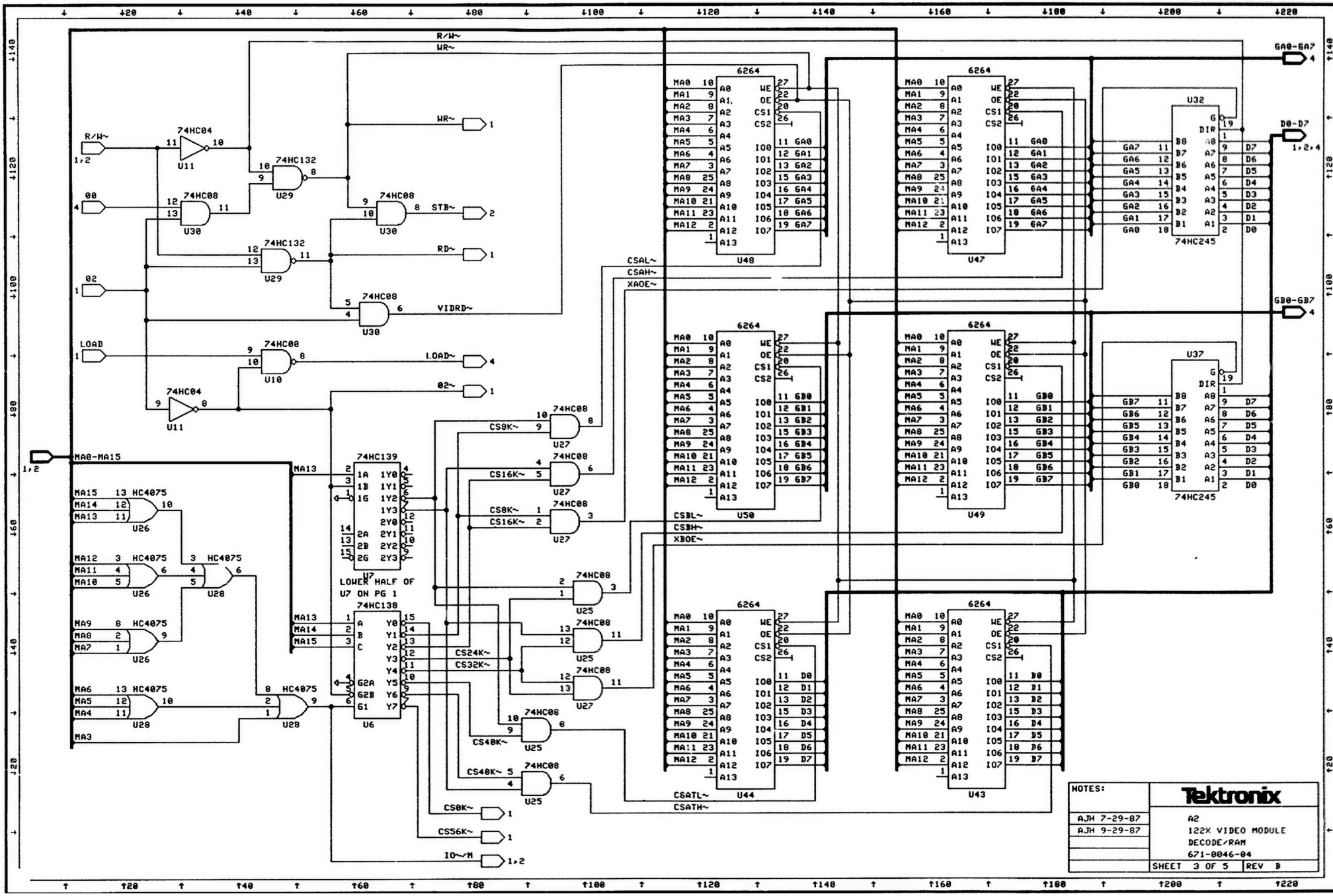
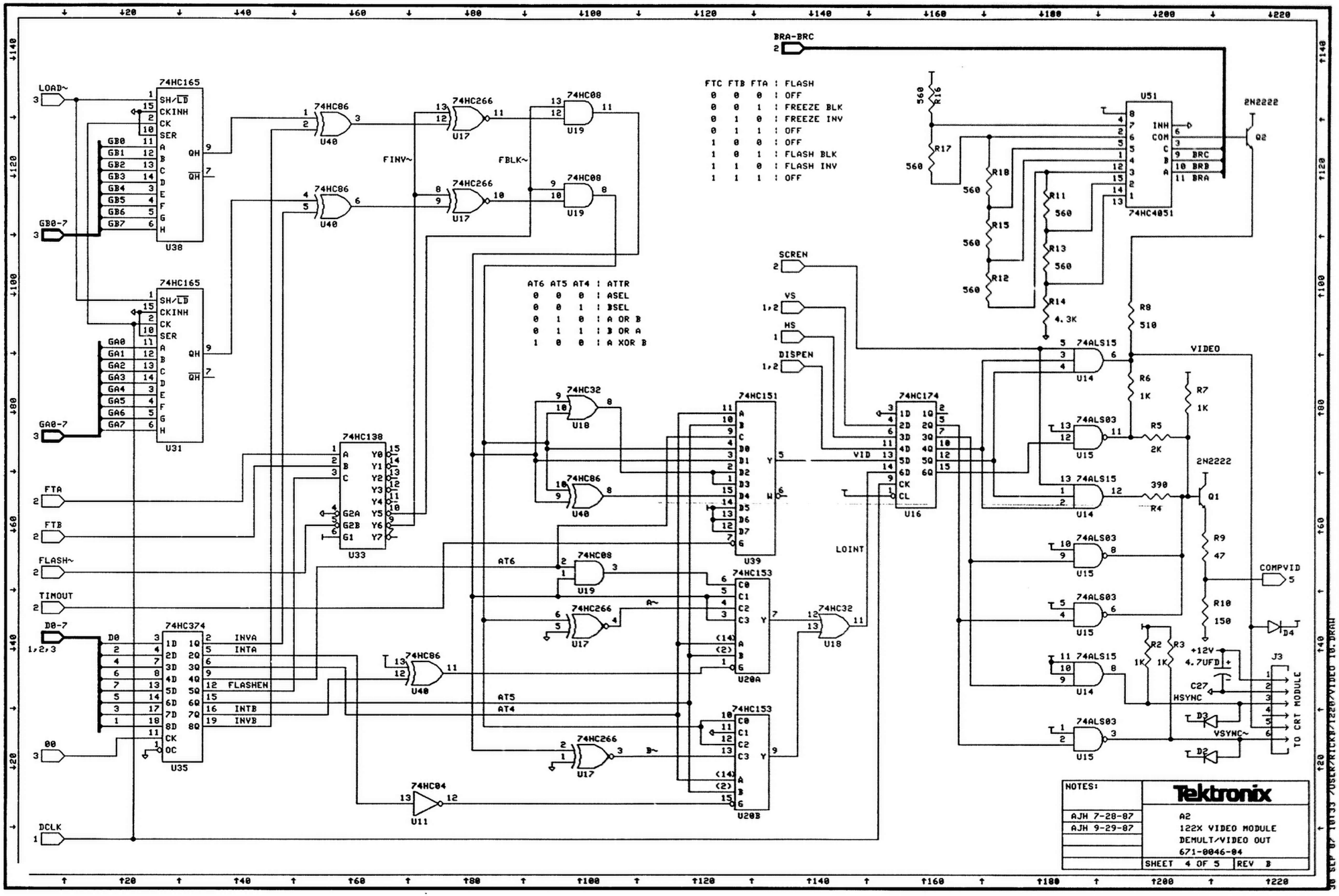
NOTES:	Tektronix
7/18/87 RB	A1 122X CONTROLLER MODULE
7-30-87 AJH	OPTION CONNECTOR PINOUTS
AJH 9-24-87	671-0048-02
	671-0056-02
	SHEET 7 OF 7 REV E

28 SEP 87 15:36 /USER/RICKB/1220/CONTROLLER 15.DRAW





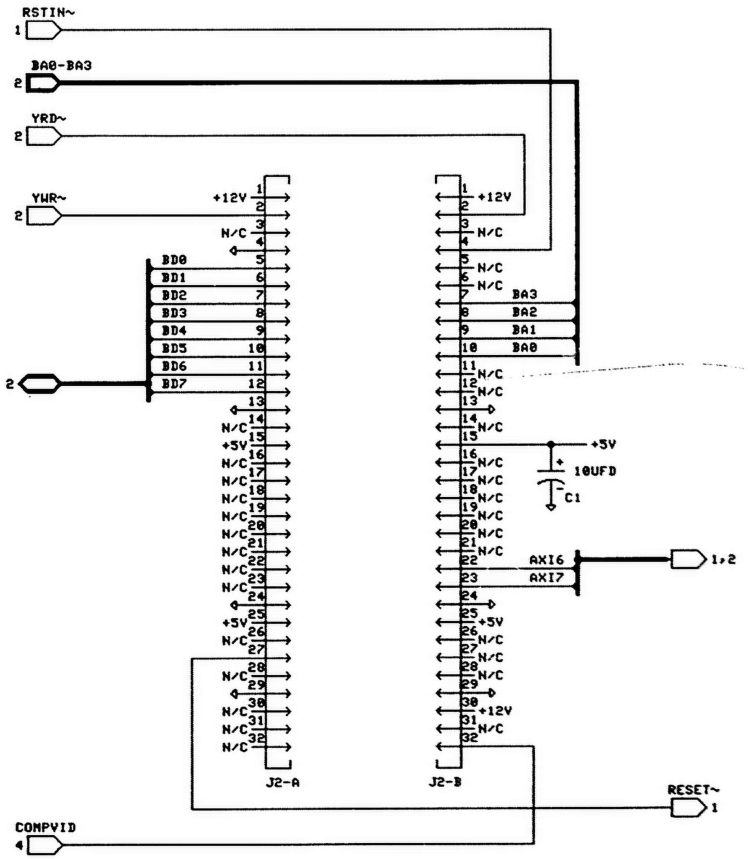




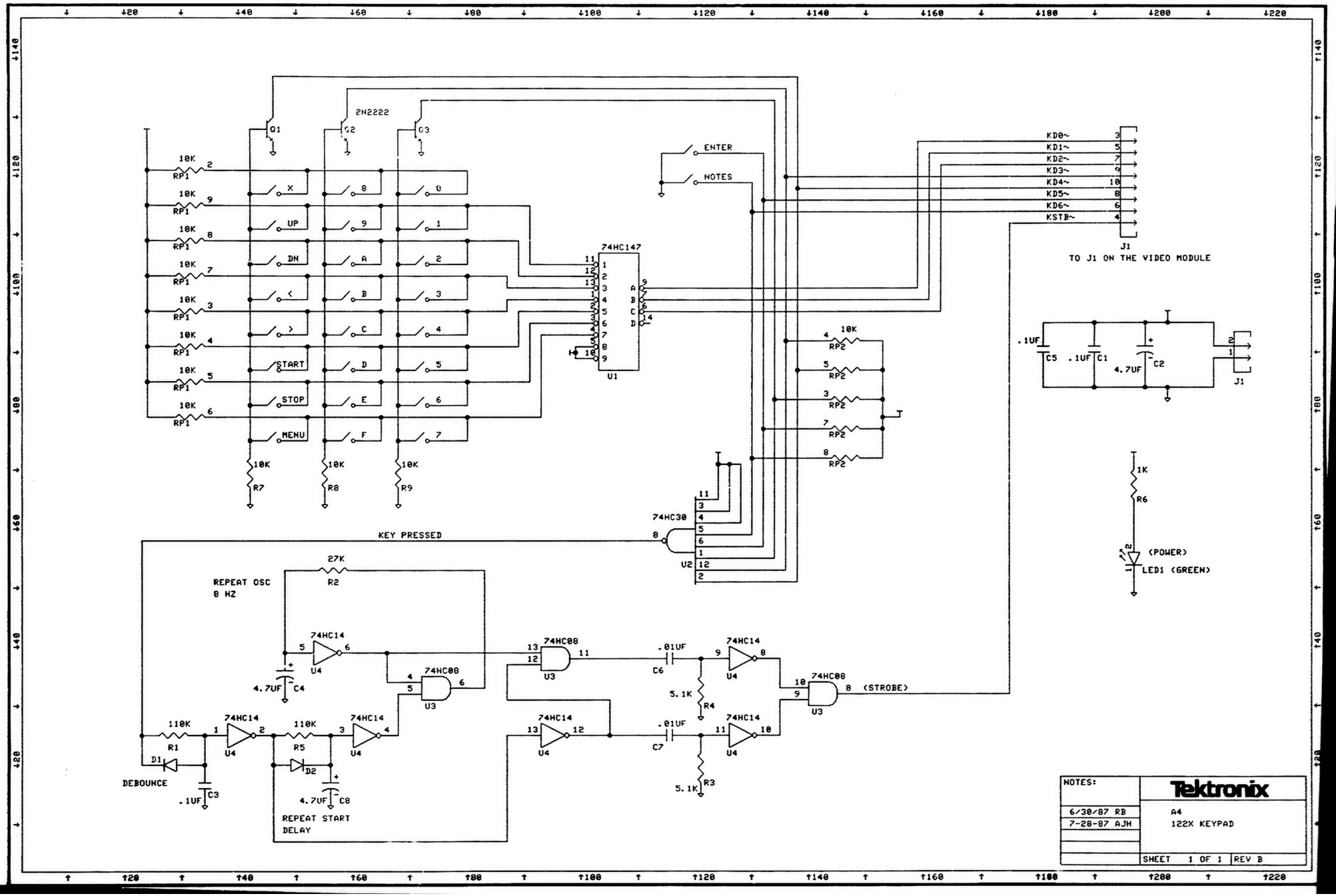
NOTE: J2-A PINS 2, 29, 30, 31, AND 32
J2-B PINS 2, 29, 30, 31, AND 32
ARE TRIMMED OFF AT THE BACK OF THE VIDEO
CIRCUIT BOARD. THESE PINS DO NOT CONNECT
TO THE ANALYZER CIRCUIT BOARDS.

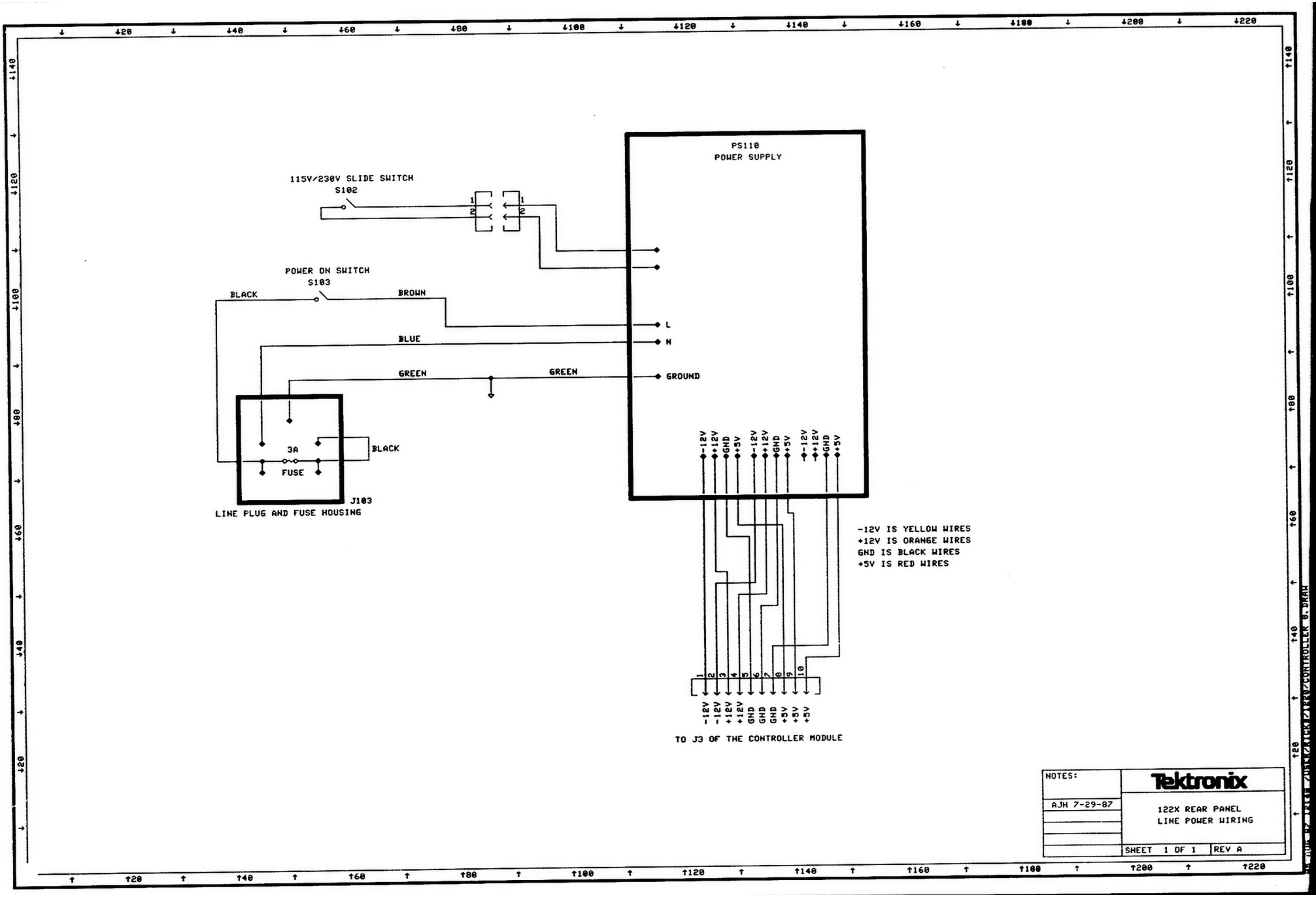
.1

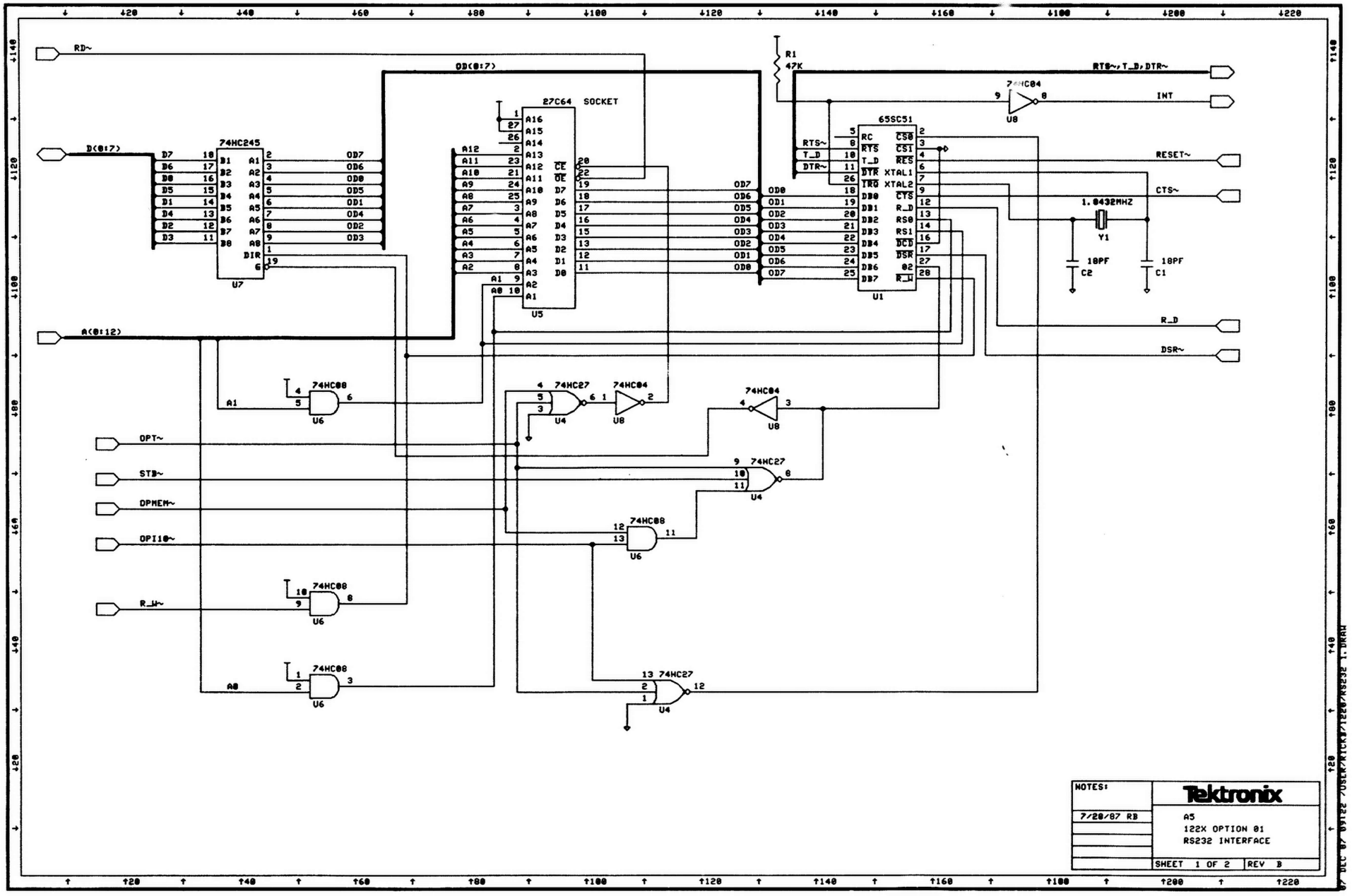
DECOUPLING CAPS:
C2,C3,C4,C6,C7,C8,C9,C10,C12,C13,C14,C15,
C16,C17,C18,C19,C21,C22,C23,C24,C25,C26,
C28,C29,C30,C31,C32,C33,C34,C35,C36,C37.

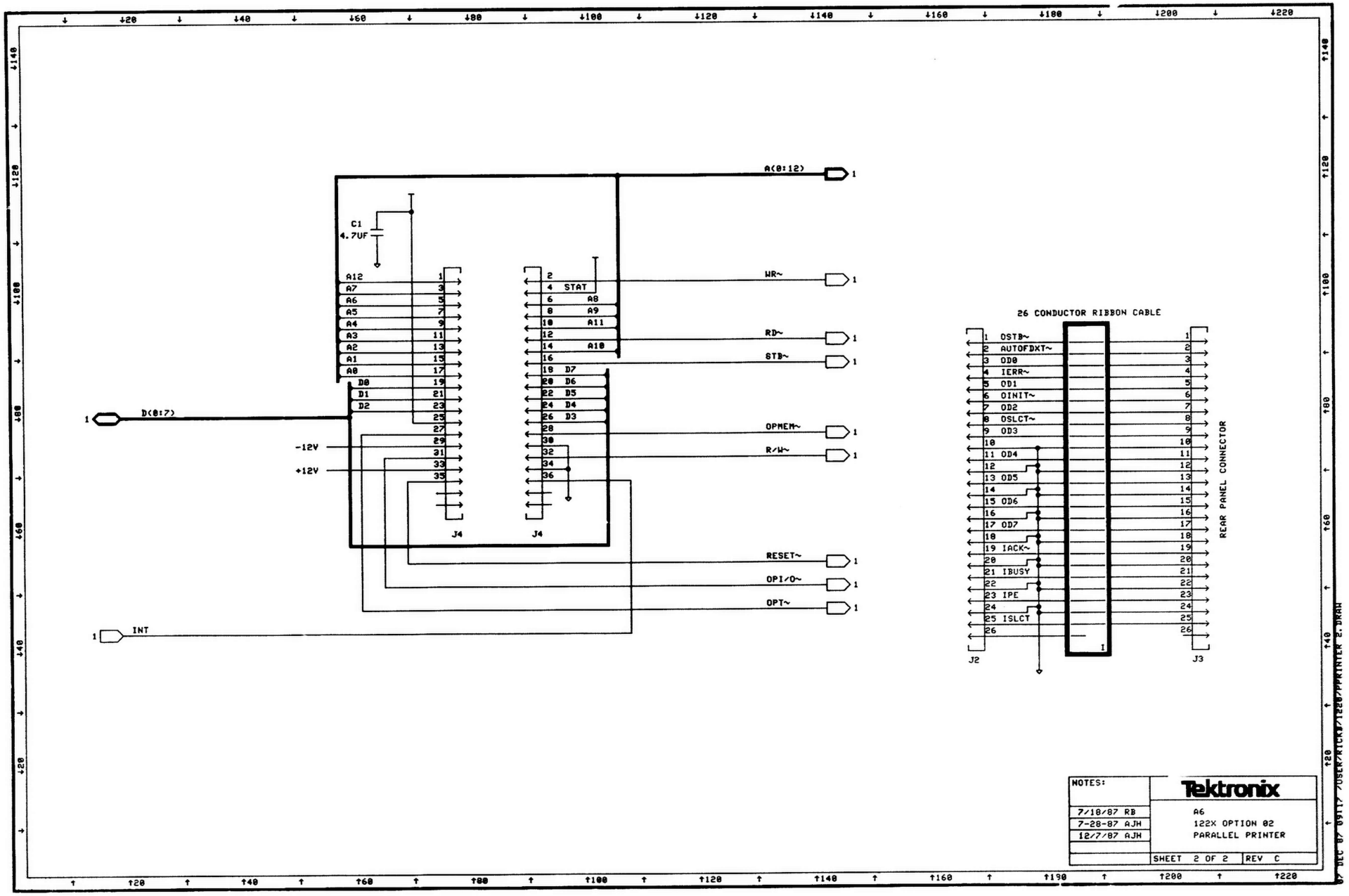


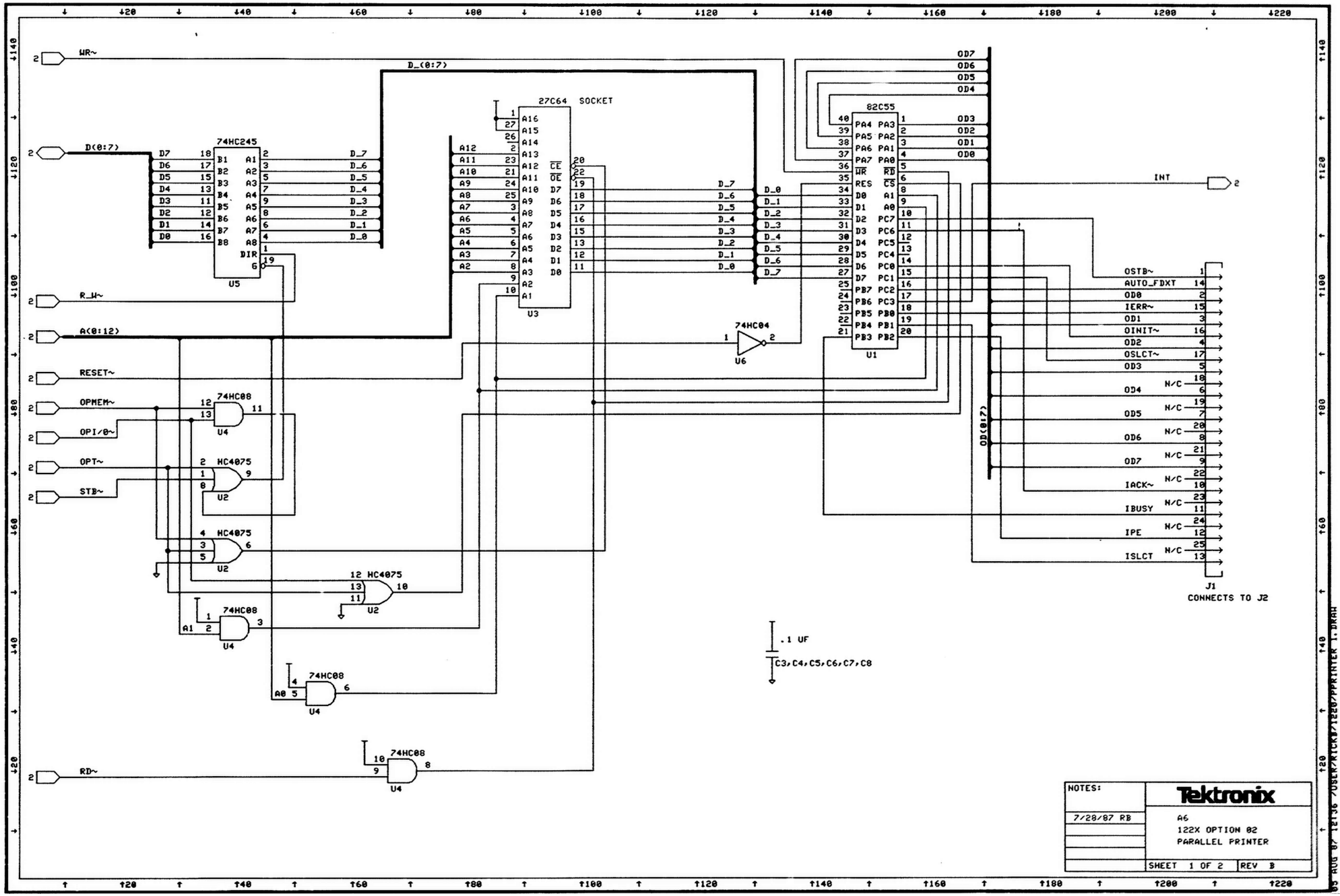
NOTES:	Tektronix
AJH 7-28-87	A2
AJH 9-29-87	122X VIDEO MODULE
	MAIN INTERCONNECT
	671-0046-04
	SHEET 5 OF 5 | REV B

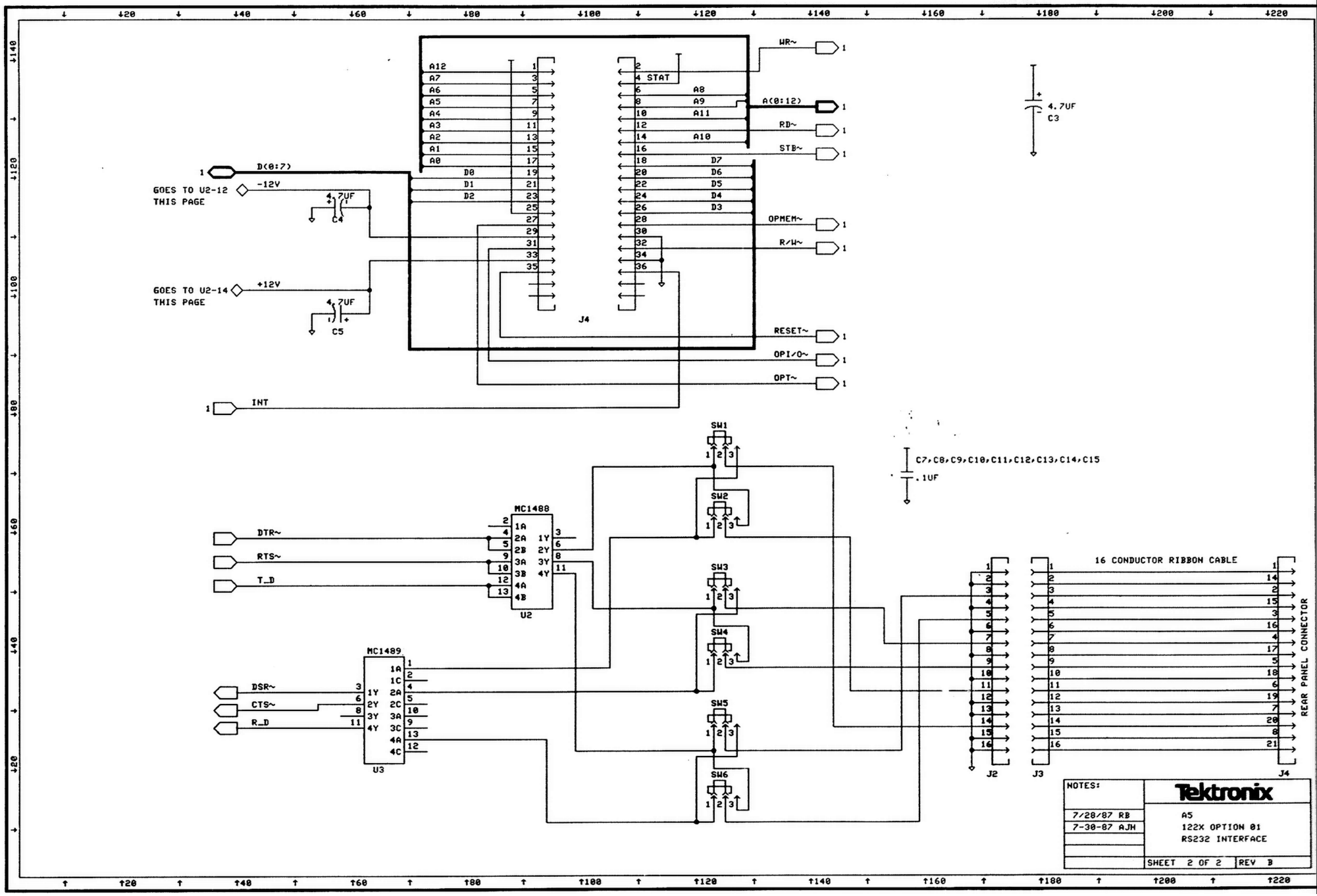












REPLACEABLE ELECTRICAL PARTS

PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc Field Office or representative

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department It is therefore important, when ordering parts, to include the following information in your order Part number, instrument type or number, serial number, and modification number if applicable

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc Field Office or representative will contact you concerning any change in part number

Change information, if any, is located at the rear of this manual

LIST OF ASSEMBLIES

A list of assemblies can be found at the beginning of the Electrical Parts List The assemblies are listed in numerical order When the complete component number of a part is known, this list will identify the assembly in which the part is located

CROSS INDEX-MFR. CODE NUMBER TO MANUFACTURER

The Mfr Code Number to Manufacturer index for the Electrical Parts List is located immediately after this page The Cross Index provides codes, names and addresses of manufacturers of components listed in the Electrical Parts List

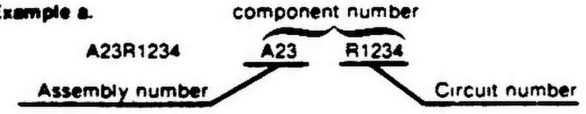
ABBREVIATIONS

Abbreviations conform to American National Standard Y1 1

COMPONENT NUMBER (column one of the Electrical Parts List)

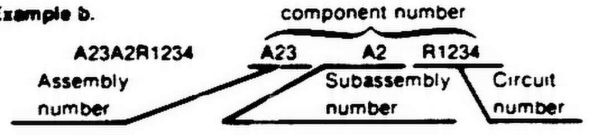
A numbering method has been used to identify assemblies, subassemblies and parts Examples of this numbering method and typical expansions are illustrated by the following

Example a.



Read: Resistor 1234 of Assembly 23

Example b.



Read: Resistor 1234 of Subassembly 2 of Assembly 23

Only the circuit number will appear on the diagrams and circuit board illustrations Each diagram and circuit board illustration is clearly marked with the assembly number Assembly numbers are also marked on the mechanical exploded views located in the Mechanical Parts List The component number is obtained by adding the assembly number prefix to the circuit number

The Electrical Parts List is divided and arranged by assemblies in numerical sequence (e g , assembly A1 with its subassemblies and parts, precedes assembly A2 with its subassemblies and parts)

Chassis-mounted parts have no assembly number prefix and are located at the end of the Electrical Parts List

TEKTRONIX PART NO. (column two of the Electrical Parts List)

Indicates part number to be used when ordering replacement part from Tektronix

SERIAL/MODEL NO. (columns three and four of the Electrical Parts List)

Column three (3) indicates the serial number at which the part was first used Column four (4) indicates the serial number at which the part was removed No serial number entered indicates part is good for all serial numbers

NAME & DESCRIPTION (column five of the Electrical Parts List)

In the Parts List, an Item Name is separated from the description by a colon ( ) Because of space limitations, an Item Name may sometimes appear as incomplete For further Item Name identification, the U S Federal Cataloging Handbook H6-1 can be utilized where possible

MFR. CODE (column six of the Electrical Parts List)

Indicates the code number of the actual manufacturer of the part (Code to name and address cross reference can be found immediately after this page)

MFR. PART NUMBER (column seven of the Electrical Parts List)

Indicates actual manufacturers part number

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
00779	AMP INC	P O BOX 3608	HARRISBURG PA 17105
00853	SANGAMO WESTON INC SANGAMO CAPACITOR DIV	SANGAMO RD P O BOX 128	PICKENS SC 29671
01121	ALLEN-BRADLEY CO	1201 SOUTH 2ND ST	MILWAUKEE WI 53204
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP	13500 N CENTRAL EXPRESSWAY P O BOX 225012 M/S 49	DALLAS TX 75265
02768	ILLINOIS TOOL WORKS INC FASTEX DIVISION	195 ALGONQUIN ROAD	DES PLAINES IL 60016
04222	AVX CERAMICS DIV OF AVX CORP	19TH AVE SOUTH P O BOX 867	MYRTLE BEACH SC 29577
04713	MOTOROLA INC SEMICONDUCTOR GROUP	5005 E MCDOWELL RD	PHOENIX AZ 85008
05397	UNION CARBIDE CORP MATERIALS SYSTEMS DIV	11901 MADISON AVE	CLEVELAND OH 44101
05828	GENERAL INSTRUMENT CORP GOVERNMENT SYSTEMS DIV	600 W JOHN ST	HICKSVILLE NY 11802
07263	FAIRCHILD CAMERA AND INSTRUMENT CORP SEMICONDUCTOR DIV	464 ELLIS ST	MOUNTAIN VIEW CA 94042
09922	BURNDY CORP	RICHARDS AVE	NORWALK CT 06852
11236	CTS OF BERNE INC	406 PARR ROAD	BERNE IN 46711
12969	UNITRODE CORP	580 PLEASANT ST	WATERTOWN MA 02172
18324	SIGNETICS CORP	811 E ARQUES	SUNNYVALE CA 94086
19701	MEPCO/ELECTRA INC A NORTH AMERICAN PHILIPS CO	P O BOX 760	MINERAL WELLS TX 76067
22526	DU PONT E I DE NEMOURS AND CO INC DU PONT CONNECTOR SYSTEMS DIV MILITARY PRODUCTS GROUP	515 FISHING CREEK RD	NEW CUMBERLAND PA 17070-3007
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR	SANTA CLARA CA 95051
32293	INTERSIL INC	10900 N TANTAU AVE	CUPERTINO CA 95014
34335	ADVANCED MICRO DEVICES	901 THOMPSON PL	SUNNYVALE CA 94086
53387	MINNESOTA MINING AND MFG CO ELECTRONIC PRODUCTS DIV	3M CENTER	ST PAUL MN 55101
54473	MATSUSHITA ELECTRIC CORP OF AMERICA	ONE PANASONIC WAY	SECAUCUS NJ 07094
57668	ROHM CORP	16931 MILLIKEN AVE	IRVINE CA 92713
58361	GENERAL INSTRUMENT CORP OPTOELECTRONICS DIV	3400 HILLVIEW AVE	PALO ALTO CA 94304
59821	CENTRALAB INC SUB NORTH AMERICAN PHILIPS CORP	7158 MERCHANT AVE	EL PASO TX 79915
76381	MINNESOTA MINING AND MFG CO	3M CENTER	ST PAUL MN 55101
80009	TEKTRONIX INC	4900 S W GRIFFITH DR P O BOX 500	BEAVERTON OR 97077
82389	SWITCHCRAFT INC SUB OF RAYTHEON CO	5555 N ELSTRON AVE	CHICAGO IL 60630
TK0935	MARQUARDT SWITCHES INC	MARQUARDT 67 ALBANY ST	CAZENOVIA NY 13035
TK0961	NEC ELECTRONICS USA INC	401 ELLIS ST	MOUNTAIN VIEW CA 94043
TK1016	TOSHIBA AMERICA INC ELECTRONIC COMPONENTS DIV BUSINESS SECTOR	2692 DO[illegible] VE	TUSTIN CA 92680
TK1483	TEKA PRODUCTS INC	45 SALEM ST	PROVIDENCE RI 02907

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1	671-0048-00	B010100	B010223	CIRCUIT BD ASSY:CONTROLLER #1	80009	671-0048-00
A1	671-0048-01	B010224	B010367	CIRCUIT BD ASSY:CONTROLLER #1	80009	671-0048-01
A1	671-0048-02	B010368		CIRCUIT BD ASSY:CONTROLLER #1	80009	671-0048-02
A2	671-0046-00	B010100	B010219	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-00
A2	671-0046-01	B010220	B010223	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-01
A2	671-0046-02	B010224	B010311	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-02
A2	671-0046-03	B010312	B010340	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-03
A2	671-0046-04	B010341		CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-04
A3	671-0047-00			CIRCUIT BD ASSY:ANALYZER	80009	671-0047-00
A4	671-0055-00	B010100	B010205	CIRCUIT BD ASSY:KEYPAD	80009	671-0055-00
A4	671-0055-01	B010206		CIRCUIT BD ASSY:KEYPAD	80009	671-0055-01
A5	671-0208-00			CIRCUIT BOARD:RS232 INTERFACE (OPTION 01 ONLY)	80009	671-0208-00
A6	671-0151-00	B010100	B010250	CIRCUIT BD ASSY:PARALLEL PRINTER	80009	671-0151-00
A6	671-0151-01	B010251		CIRCUIT BD ASSY:PARALLEL PRINTER (OPTION 02 ONLY)	80009	671-0151-01
A11	671-0050-00			CIRCUIT BD ASSY:PROBE,16 CH TOP (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0050-00
A12	671-0051-00			CIRCUIT BD ASSY:PROBE,16 CH BOTTOM (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0051-00
A1	671-0048-00	B010100	B010223	CIRCUIT BD ASSY:CONTROLLER #1	80009	671-0048-00
A1	671-0048-01	B010224	B010367	CIRCUIT BD ASSY:CONTROLLER #1	80009	671-0048-01
A1	671-0048-02	B010368		CIRCUIT BD ASSY:CONTROLLER #1	80009	671-0048-02
A1BH1	146-0063-00			BATTERY,DRY:3V,150MAH,BUTTON CELL,LITHIUM	80009	146-0063-00
A1BH2	146-0063-00			BATTERY,DRY:3V,150MAH,BUTTON CELL,LITHIUM	80009	146-0063-00
A1C1	290-0748-00	B010100	B010367	CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-B1EV100S
A1C1	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C2	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C2	290-0525-00	B010368		CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C3	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C3	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C4	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C4	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C5	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C5	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C6	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C6	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C7	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C7	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C8	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C8	290-0525-00	B010368		CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C9	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C9	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C10	290-0525-00	B010100	B010367	CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C10	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C11	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C11	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C12	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C12	290-0748-00	B010368		CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-B1EV100S
A1C13	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C13	283-0159-00	B010368		CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C14	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C14	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C15	290-0525-00	B010100	B010367	CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C15	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C16	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1C16	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C17	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C17	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C18	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C18	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C19	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C19	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C20	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C20	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C21	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C21	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C22	283-0159-00	B010100	B010367	CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C22	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C23	283-0159-00			CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C24	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C24	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C25	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C25	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C26	283-0648-00	B010100	B010367	CAP,FXD,MICA DI:10PF,5%,500V	00853	D155C10000
A1C27	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C27	283-0648-00	B010368		CAP,FXD,MICA DI:10PF,5%,500V	00853	D155C10000
A1C28	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C28	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C29	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C29	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C30	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C30	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C31	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C31	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C32	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C32	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C33	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C33	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C34	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C34	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C35	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C35	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C36	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C36	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D2	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D3	152-0574-00	B010368		SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D6	152-0574-00	B010224	B010367	SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1J1	131-4043-00			CONN,RCPT,ELEC:2 X 32,SOCKET	80009	131-4043-00
A1J2	131-3994-00			CONN,RCPT,ELEC:HEADER,1 X 6,MALE,0.1 SPACING W/LATCH	80009	131-3994-00
A1J3	131-3993-00			CONN,RCPT,ELEC:HEADER,1 X 10,MALE,0.1 SPACING W/LATCH	80009	131-3993-00
A1J4	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1J5	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1J6	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1Q1	151-0188-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A1Q2	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A1Q3	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A1R1	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R2	315-0114-00			RES,FXD,FILM:110K OHM,5%,0.25W	19701	5043CX110K0J
A1R3	315-0395-00			RES,FXD,FILM:3.9M OHM,5%,0.25W	01121	CB3955
A1R4	315-0471-00	B010368		RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1C16	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C17	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C17	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C18	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C18	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C19	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C19	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C20	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C20	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C21	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C21	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C22	283-0159-00	B010100	B010367	CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C22	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C23	283-0159-00			CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C24	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C24	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C25	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C25	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C26	283-0648-00	B010100	B010367	CAP,FXD,MICA DI:10PF,5%,500V	00853	D155C10000
A1C27	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C27	283-0648-00	B010368		CAP,FXD,MICA DI:10PF,5%,500V	00853	D155C10000
A1C28	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C28	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C29	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C29	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C30	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C30	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C31	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C31	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C32	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C32	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C33	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C33	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C34	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C34	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C35	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C35	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C36	283-0024-00	B010100	B010367	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C36	283-0421-00	B010368		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D2	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D3	152-0574-00	B010368		SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D6	152-0574-00	B010224	B010367	SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1J1	131-4043-00			CONN,RCPT,ELEC:2 X 32,SOCKET	80009	131-4043-00
A1J2	131-3994-00			CONN,RCPT,ELEC:HEADER,1 X 6,MALE,0.1 SPACING W/LATCH	80009	131-3994-00
A1J3	131-3993-00			CONN,RCPT,ELEC:HEADER,1 X 10,MALE,0.1 SPACING W/LATCH	80009	131-3993-00
A1J4	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1J5	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1J6	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1Q1	151-0188-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A1Q2	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A1Q3	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A1R1	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R2	315-0114-00			RES,FXD,FILM:110K OHM,5%,0.25W	19701	5043CX110K0J
A1R3	315-0395-00			RES,FXD,FILM:3.9M OHM,5%,0.25W	01121	CB3955
A1R4	315-0471-00	B010368		RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1R5	315-0102-00	B010368		RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R6	315-0103-00	B010100	B010129	RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R6	315-0473-00	B010130	B010152	RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A1R6	315-0683-00	B010153		RES,FXD,FILM:68K OHM,5%,0.25W	57668	NTR25J-E68K0
A1R7	315-0102-00	B010100	B010367	RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R8	315-0821-00			RES,FXD,FILM:820 OHM,5%,0.25W	19701	5043CX820R0J
A1R9	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R10	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R11	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A1R12	315-0182-00			RES,FXD,FILM:1.8K OHM,5%,0.25W	57668	NTR25J-E1K8
A1R13	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A1R14	315-0471-00	B010153	B010367	RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A1R14	311-2390-00	B010368		RES,VAR,NONWW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A1R15	315-0102-00	B010153	B010367	RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R16	315-0224-00	B010153	B010170	RES,FXD,FILM:220K OHM,5%,0.25W	57668	NTR25J-E220K
A1RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A1RP2	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A1RP3	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A1S1	307-1137-00	B010100	B010367	RES NTWK,FXD,FI:8,0.005 OHM,+150-50%,0.125W	00779	435704-8
A1S2	307-1365-00			RES NTWK,FXD,FI:0 OHM,14 PIN,PRGM SHUNT	80009	307-1365-00
A1U1	156-3068-00			MICROCKT,DGTL:CMOS,OCTAL D LATCH,W/3 STATE	80009	156-3068-00
A1U2	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A1U3	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A1U4	156-3066-00			MICROCKT,DGTL:CMOS,8 TO 1 SEL MULTIPLEXER	80009	156-3066-00
A1U5	156-3066-00			MICROCKT,DGTL:CMOS,8 TO 1 SEL MULTIPLEXER	80009	156-3066-00
A1U6	156-3061-00			MICROCKT,DGTL:CMOS,QUAD 2 INP EXCL OR GATE	80009	156-3061-00
A1U7	156-3064-00			MICROCKT,DGTL:CMOS,8 BIT PRL-OUT	80009	156-3064-00
A1U8	156-2478-00			MICROCKT,DGTL:CMOS,CLOCK,DATE & TIME	32293	ICM7170CPG/IPG
A1U9	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U10	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A1U11	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A1U12	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A1U13	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A1U14	156-2879-00			MICROCKT,DGTL:DUAL 4 BIT DECADE & BIN CNTR	80009	156-2879-00
A1U15	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A1U16	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A1U17	160-4658-01			MICROCKT,DGTL:CMOS,32768 X 8 EPROM,PRGM	80009	160-4658-01
A1U19	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U20	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U21	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U22	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A1U23	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A1U24	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A1U25	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A1U26	156-3059-00			MICROCKT,DGTL:CMOS,8 INP NAND GATE	80009	156-3059-00
A1U27	156-2906-00			MICROCKT,DGTL:DUAL 4 BIT BINARY RIPPLE CNTR	18324	74HC393N
A1U28	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U29	156-2584-00			MICROCKT,DGTL:OCTAL D-TYPE FF W/CLEAR	01295	SN74C273N
A1U30	160-4659-00	B010100	B010129	MICROCKT,DGTL:CMOS,32768 X 8 EPROM,PRGM	80009	160-4659-00
A1U30	160-4659-01	B010130		MICROCKT,DGTL:CMOS,32768 X 8 EPROM,PRGM	80009	160-4659-01
A1U32	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U33	156-3051-00			MICROCKT,DGTL:CMOS,8 BIT MICRO PRC,2MHZ	80009	156-3051-00
A1U34	156-2773-00			MICROCKT,DGTL:CMOS,PRGM INTERVAL TIMER,8MZ	80009	156-2773-00
A1U35	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U36	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U37	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U44	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U45	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1U46	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U47	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U48	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U49	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U50	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A1U51	156-2685-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE	80009	156-2685-00
A1U52	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A1VR1	311-2390-00	B010100	B010367	RES,VAR,NONWW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A1XS1	136-0729-00	B010100	B010367	SKT,PL-IN ELEK:MICROCKT,16 CONTACT	09922	DILB16P-108T
A1XS2	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A1XU17	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1XU18	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1XU30	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1XU31	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1Y1	158-0333-00			XTAL UNIT,QTZ:32.768KHZ,0.002%,PARALLEL,N38	80009	158-0333-00
A1Y2	158-0332-00			XTAL UNIT,QTZ:25MHZ,0.002%,HC18O	80009	158-0332-00
A2	671-0046-00	B010100	B010219	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-00
A2	671-0046-01	B010220	B010223	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-01
A2	671-0046-02	B010224	B010311	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-02
A2	671-0046-03	B010312	B010340	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-03
A2	671-0046-04	B010341		CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-04
A2C1	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-B1EV100S
A2C2	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C3	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C4	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C5	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C6	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C7	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C8	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C9	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C10	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C11	283-0115-00			CAP,FXD,CER DI:47PF,5%,200V	59821	2DDT60K470J
A2C12	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C13	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C14	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C15	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C16	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C17	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C18	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C19	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C20	290-0525-00	B010100	B010223	CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T3688475M050AS
A2C21	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C22	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C23	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C24	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C25	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C26	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C28	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C29	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C30	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C31	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C32	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C33	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C34	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C35	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C36	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C37	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2D2	152-0066-00	B010341		SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A2D3	152-0066-00	B010341		SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A2D4	152-0066-00	B010341		SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A2J1	131-3358-00			CONN,RCPT,ELEC:HEADER,RTANG,10 PIN	53387	3591-5002
A2J2	131-4043-00			CONN,RCPT,ELEC:2 X 32,SOCKET	80009	131-4043-00
A2J3	131-4053-00			CONN,RCPT,ELEC:HEADER,1 X 6,MALE,RTANG,0.1 SPACING,W/LATCHES	80009	131-4053-00
A2Q1	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A2Q2	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A2R1	315-0105-00			RES,FXD,FILM:1M OHM,5%,0.25W	19701	5043CX1M000J
A2R2	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R3	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R4	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A2R5	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A2R6	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R7	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R8	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A2R9	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A2R10	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
A2R11	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R12	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R13	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R14	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A2R15	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R16	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R17	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R18	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A2RP2	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A2RP3	307-0696-00			RES NTWK,FXD,FI:7,10K OHM,2%,0.15W EACH	01121	108A103
A2U1	156-3110-00			MICROCKT,DGTL:CMOS,OCTAL BUFFER	80009	156-3110-00
A2U2	156-3107-00			MICROCKT,DGTL:CMOS,OCTAL D-TYPE FLIP-FLOP	80009	156-3107-00
A2U3	156-3107-00			MICROCKT,DGTL:CMOS,OCTAL D-TYPE FLIP-FLOP	80009	156-3107-00
A2U4	156-3067-00			MICROCKT,DGTL:CMOS,4 BIT D TYPE REG	80009	156-3067-00
A2U5	156-2009-01			MICROCKT,DGTL:FLIP FLOP DUAL D 74HC74	04713	MC74HC74 N
A2U6	156-2583-00			MICROCKT,DGTL:3 TO 8 UN DECODER	01295	SN74HC138N
A2U7	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A2U8	156-3106-00			MICROCKT,DGTL:CMOS,14 STAGE BINARY RIPPLE	80009	156-3106-00
A2U9	156-2583-00			MICROCKT,DGTL:3 TO 8 UN DECODER	01295	SN74HC138N
A2U10	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A2U11	156-2027-00			MICROCKT,DGTL:CMOS,HEX INVERTER	27014	MM74HC04N
A2U12	156-2707-00			MICROCKT,DGTL:QUAD 3 STATE BUFFER	80009	156-2707-00
A2U13	156-2906-00			MICROCKT,DGTL:DUAL 4 BIT BINARY RIPPLE CNTR	18324	74HC393N
A2U14	156-3105-00			MICROCKT,DGTL:TRIPLE 3-INPUT AND W/OC OUT	80009	156-3105-00
A2U15	156-2626-00			MICROCKT,DGTL:QUAD 2 INP POS NAND GATE	01295	74ALS03
A2U16	156-3138-00			MICROCKT,DGTL:CMOS,HEX D TYPE	80009	156-3138-00
A2U17	156-3104-00			MICROCKT,DGTL:QUAD 2 INPUT X NOR GATE W/OCT	80009	156-3104-00
A2U18	156-2463-00			MICROCKT,DGTL:HCMOS,QUAD 2-INPUT OR GATE	04713	MC74HC32ND
A2U19	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U20	156-2581-00			MICROCKT,DGTL:LSTTL,DUAL 4 CHAN MULTIPLEXER	80009	156-2581-00
A2U21	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N
A2U22	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N
A2U23	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N
A2U24	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N
A2U25	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U26	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P
A2U27	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U28	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2U29	156-3062-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3062-00
A2U30	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U31	156-3065-00			MICROCKT,DGTL:CMOS,8 BIT SR	80009	156-3065-00
A2U32	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A2U33	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A2U34	156-2584-00			MICROCKT,DGTL:OCTAL D-TYPE FF W/CLEAR	01295	SN74C273N
A2U35	156-3107-00			MICROCKT,DGTL:CMOS,OCTAL D-TYPE FLIP-FLOP	80009	156-3107-00
A2U37	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A2U38	156-3065-00			MICROCKT,DGTL:CMOS,8 BIT SR	80009	156-3065-00
A2U39	156-3066-00			MICROCKT,DGTL:CMOS,8 TO 1 SEL/MULTIPLEXER	80009	156-3066-00
A2U40	156-3061-00			MICROCKT,DGTL:CMOS,QUAD 2 INP,EXCL OR GATE	80009	156-3061-00
A2U41	156-3051-00			MICROCKT,DGTL:CMOS,8 BIT MICRO PRC,2MHZ	80009	156-3051-00
A2U42	156-3109-00			MICROCKT,DGTL:CRT CONTROLLER	80009	156-3109-00
A2U43	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U44	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U45	160-4660-00			MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4660-00
A2U46	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U47	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U48	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U49	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U50	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U51	156-2605-00			MICROCKT,DGTL:HCMOS,ANALOG MUX,8 CHANNEL	80009	156-2605-00
A2U52	156-2421-00			MICROCKT,DGTL:QUAD D FLIP FLOP	04713	MC74HC175N
A2XU45	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A2Y1	158-0335-00			XTAL UNIT,QTZ:9.8304MHZ,0.005%,SERIES	80009	158-0335-00
A3	671-0047-00			CIRCUIT BD ASSY:ANALYZER	80009	671-0047-00
A3C1	283-0647-00			CAP,FXD,MICA DI:70PF,1%,100V	00853	D155E700F0
A3C2	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C3	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C4	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-B1EV100S
A3C5	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C6	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C7	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C8	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C9	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C10	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C11	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C12	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C13	283-0647-00			CAP,FXD,MICA DI:70PF,1%,100V	00853	D155E700F0
A3C14	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
				(C14 THRU C90)		
A3C90	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C91	281-0785-00			CAP,FXD,CER DI:68PF,10%,100V	04222	MA101A680KAA
A3D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A3D2	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A3D3	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A3J1	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A3J2	131-4043-00			CONN,RCPT,ELEC:2 X 32,SOCKET	80009	131-4043-00
A3J3	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A3J4	131-3181-00			CONN,RCPT,ELEC:HEADER,RTANG,2 X 20,0.1 CTR	22526	75867-007
A3J5	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A3J6	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A3P1	311-2390-00			RES,VAR,NONWW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A3P2	311-2390-00			RES,VAR,NONWW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A3P3	311-2390-00			RES,VAR,NONWW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A3R1	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Decont	Name & Description	Mfr. Code	Mfr. Part No.
A3R2	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A3R4	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3R5	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3R7	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3R10	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A3R11	315-0821-00			RES,FXD,FILM:820 OHM,5%,0.25W	19701	5043CX820R0J
A3RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A3RP2	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A3RP3	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A3U1	156-1743-00			MICROCKT,DGTL:ASTTL,QUAD 2-INPUT NOR GATE	18324	74F02 NB OR FB
A3U2	156-1743-00			MICROCKT,DGTL:ASTTL,QUAD 2-INPUT NOR GATE	18324	74F02 NB OR FB
A3U3	156-3054-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3054-00
A3U4	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U5	156-3070-00			MICROCKT,DGTL:CMOS,DUAL 4 INP NOR	80009	156-3070-00
A3U6	156-1832-00			MICROCKT,DGTL:3 INPUT NAND	01295	SN74ALS10A
A3U7	156-2091-00			MICROCKT,DGTL:QUAD 2-INP POS NAND GATES	01295	SN74ALS00AN3
A3U8	156-2851-00			MICROCKT,DGTL:HCMOS,DUAL J-K FF W/CLEAR	80009	156-2851-00
A3U9	156-3053-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3053-00
A3U10	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A3U11	156-3060-00			MICROCKT,DGTL:CMOS,DUAL D FLIP-FLOP	80009	156-3060-00
A3U12	156-2096-00			MICROCKT,DGTL:OCTAL D-TYPE FLIP-FLOPS	01295	SN74ALS175N
A3U13	156-1756-00			MICROCKT,DGTL:DUAL D-TYPE POS-EDGE-TRIG FF	01295	SN74ALS74NP3/JP4
A3U14	156-2583-00			MICROCKT,DGTL:3 TO 8 UN DECODER	01295	SN74HC138N
A3U15	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U16	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U17	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U18	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U19	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U20	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U21	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U22	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U23	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U24	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U25	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U26	156-2093-00			MICROCKT,DGTL:QUAD 2-INP POSITIVE OR GATE	01295	SN74ALS32N3
A3U27	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U28	156-1746-00			MICROCKT,DGTL:ASTTL,8-INPUT MULTIPLXRS	07263	74F151 (PCQR)
A3U29	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U30	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U32	156-1832-00			MICROCKT,DGTL:3 INPUT NAND	01295	SN74ALS10A
A3U33	156-2113-00			MICROCKT,DI:QUAD 2-INPUT POSITIVE-AND GATE	01295	SN74ALS08N3
A3U34	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U35	156-1746-00			MICROCKT,DGTL:ASTTL,8-INPUT MULTIPLXRS	07263	74F151 (PCQR)
A3U36	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U37	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U38	156-2101-00			MICROCKT,DGTL:DUAL 4-INP POS NAND GATES	01295	SN74ALS20AN3
A3U38	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NCS
A3U39	156-2093-00			MICROCKT,DGTL:QUAD 2-INP POSITIVE OR GATE	01295	SN74ALS32N3
A3U40	156-1756-00			MICROCKT,DGTL:DUAL D-TYPE POS-EDGE-TRIG FF	01295	SN74ALS74NP3/JP4

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3U41	156-1752-00			MICROCKT,DGTL:TRIPLE 3-INPUT NAND GATE,SCRN	18324	74F10 (NB OR FB)
A3U42	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A3U43	156-2026-00			MICROCKT,DGTL:CMOS,QUAD 2 INPUT NOR GATE	04713	MC74HC02(N OR J)
A3U44	156-3053-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3053-00
A3U45	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P
A3U46	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U47	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U48	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U49	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U50	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U51	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U52	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U53	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U54	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U55	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U56	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U57	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U58	156-2091-00			MICROCKT,DGTL:QUAD 2-INP POS NAND GATES	01295	SN74ALS00AN3
A3U59	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U60	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U61	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U62	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U63	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U64	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U65	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U66	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U67	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U68	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U69	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U70	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U71	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A3U72	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U73	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U74	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U75	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U76	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U77	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U78	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U79	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U80	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U81	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U82	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U83	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U84	156-2101-00			MICROCKT,DGTL:DUAL 4-INP POS NAND GATES	01295	SN74ALS20AN3
A3U85	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U86	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U87	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3U89	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U90	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U91	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U92	156-1800-00			MICROCKT,DGTL:ASTTL,QUAD 2 INP EXCL OR GATE	18324	N74F86(NB OR JB)
A3U93	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U94	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U95	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U96	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U97	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U98	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U99	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U100	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U101	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U102	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U103	156-2000-00			MICROCKT,DGTL:MOS,2048 X 8 BIT STATIC RAM	TK1016	TMM2018D-45
A3U104	156-2000-00			MICROCKT,DGTL:MOS,2048 X 8 BIT STATIC RAM	TK1016	TMM2018D-45
A3U105	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U106	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U107	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U108	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U109	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U110	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U111	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U112	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U113	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U114	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U115	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U116	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3XU11	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU41	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU42	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU44	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU71	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU74	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU77	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU92	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU93	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU94	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A4	671-0055-00	B010100	B010205	CIRCUIT BD ASSY:KEYPAD	80009	671-0055-00
A4	671-0055-01	B010206		CIRCUIT BD ASSY:KEYPAD	80009	671-0055-01
A4C1	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A4C2	290-0956-00			CAP,FXD,ELCTLT:4.7UF,10%,35V	05397	T362B475K035AS
A4C3	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A4C4	290-0956-00			CAP,FXD,ELCTLT:4.7UF,10%,35V	05397	T362B475K035AS
A4C5	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A4C6	283-0220-02			CAP,FXD,CER DI:0.01UF,20%,50V	05397	C320C103M2R5CA
A4C7	283-0220-02			CAP,FXD,CER DI:0.01UF,20%,50V	05397	C320C103M2R5CA
A4C8	290-0956-00			CAP,FXD,ELCTLT:4.7UF,10%,35V	05397	T362B475K035AS
A4D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4D2	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A4LE1	150-1029-00			LT EMITTING DIO:GREEN,565NM,35MA (SCHEMATIC DESIGNATION LED1)	58361	Q6480/MV5274C
A4Q1	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A4Q2	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A4Q3	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A4R1	315-0114-00			RES,FXD,FILM:110K OHM,5%,0.25W	19701	5043CX110K0J
A4R2	315-0273-00			RES,FXD,FILM:27K OHM,5%,0.25W	57668	NTR25J-E27K0
A4R3	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A4R4	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A4R5	315-0114-00			RES,FXD,FILM:110K OHM,5%,0.25W	19701	5043CX110K0J
A4R6	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R7	317-0103-00	B010206		RES,FXD,CMPSN:10K OHM,5%,0125W	01121	BB1035
A4R8	317-0103-00	B010206		RES,FXD,CMPSN:10K OHM,5%,0125W	01121	BB1035
A4R9	317-0103-00	B010206		RES,FXD,CMPSN:10K OHM,5%,0125W	01121	BB1035
A4RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A4RP2	307-0696-00			RES NTWK,FXD,FI:7,10K OHM,2%,0.15W EACH	01121	108A103
A4SW1	260-2359-00			SWITCH,PUSH:SPST,10MA,35VDC,MOMENTARY (QUANTITY OF 26)	80009	260-2359-00
A4U1	156-3078-00			MICROCKT,DGTL:CMOS,DEC TO BCD ENCODER	80009	156-3078-00
A4U2	156-3059-00			MICROCKT,DGTL:CMOS,8 INP NAND GATE	80009	156-3059-00
A4U3	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A4U4	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A5	671-0208-00			CIRCUIT BOARD:RS232 INTERFACE (OPTION 01 ONLY)	80009	671-0208-00
A5C1	283-0159-00			CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A5C2	283-0159-00			CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A5C3	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A5C4	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A5C5	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A5C7	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C8	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C9	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C10	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C11	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C12	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C13	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C14	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C15	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5J1	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A5J2	131-3435-00			CONN,RCPT,ELEC:HEADER,16 CONTACT,STRAIGHT	76381	3599-6002
A5J4	131-4096-00			CONN,RCPT,ELEC:CKT BD,2 X 18,0.1 SPACING	80009	131-4096-00
A5R1	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A5U1	156-3179-00			MICROCKT,DGTL:CMOS,USART	80009	156-3179-00
A5U2	156-0879-01			MICROCKT,DGTL:QUAD LINE DRIVER SCREENED	04713	MC1488LD
A5U3	156-0878-01			MICROCKT,DGTL:QUAD LINE RCVR,SCREENED	04713	MC1489LDS
A5U4	156-3180-00			MICROCKT,DGTL:CMOS,TRIPLE 3-INP NOR GATE	80009	156-3180-00
A5U5	160-4830-00	B010100	B010159	MICROCKT,DGTL:CMOS,8192 X 8 EPROM	80009	160-4830-00
A5U5	160-4830-01	B010160		MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4830-01
A5U6	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A5U7	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A5U8	156-2027-00			MICROCKT,DGTL:CMOS,HEX INVERTER	27014	MM74HC04N
A5XU5	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A5Y1	158-0290-00			XTAL UNIT,QTZ:1.8432MHZ,SERIES RES,HC-18U	80009	158-0290-00
A6	671-0151-00	B010100	B010250	CIRCUIT BD ASSY:PARALLEL PRINTER	80009	671-0151-00
A6	671-0151-01	B010251		CIRCUIT BD ASSY:PARALLEL PRINTER (OPTION 02 ONLY)	80009	671-0151-01
A6C1	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6C3	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C4	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C5	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C6	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C7	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C8	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6J1	131-4096-00			CONN,RCPT,ELEC:CKT BD,2 X 18,0.1 SPACING	80009	131-4096-00
A6J2	131-3362-00			CONN,RCPT,ELEC:HEADER,STR,26 PIN	53387	3593-6002
A6U1	156-2905-00			MICROCKT,DGTL:CMOS,PERIPHERAL INTFC	34335	TO BE ASSIGNED
A6U2	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P
A6U3	160-4662-00	B010100	B010127	MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4662-00
A6U3	160-4662-01	B010128	B010250	MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4662-01
A6U3	160-4662-02	B010251		MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4662-02
A6U4	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A6U5	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A6U6	156-2027-00			MICROCKT,DGTL:CMOS,HEX INVERTER	27014	MM74HC04N
A6XU3	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A11	671-0050-00			CIRCUIT BD ASSY:PROBE,16 CH TOP (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0050-00
A12	671-0051-00			CIRCUIT BD ASSY:PROBE,16 CH BOTTOM (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0051-00
C100	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
F100	159-0277-00			FUSE,CARTRIDGE:5 X 20MM,3A,250V,5 SEC (STANDARD ONLY)	80009	159-0277-00
F100	159-0278-00			FUSE,CARTRIDGE:5 X 20MM,1.6A,250V,5 SEC (OPTIONS A1,A2,A3,A4,A5 ONLY)	80009	159-0278-00
J102	131-3997-00			CONN,RCPT,ELEC:PHONO TYPE,FEMALE	82389	3501-FP
J103	131-4044-00			CONN,RCPT,ELEC:PWR,MALE,250VAC,6A	80009	131-4044-00
PS110	119-2614-00			POWER SUPPLY:5V,6A,47-63HZ	80009	119-2614-00
R120	311-2391-00			RES,VAR,NONW:TRMR,1K OHM,+20%,0.5W	80009	311-2391-00
S102	260-1967-00			SWITCH,SLIDE:DPDT 5A/250V 10A/125V MKD	TK0935	4021.0512
S103	260-2357-00			SWITCH,ROCKER:SPST,8A,125/250VAC,28VDC	02768	161-099-009
V001	119-2613-00			CRT DISPLAY AS:7 INCH CHASSIS TTL,P4	80009	119-2613-00

REPLACEABLE ELECTRICAL PARTS

PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

LIST OF ASSEMBLIES

A list of assemblies can be found at the beginning of the Electrical Parts List. The assemblies are listed in numerical order. When the complete component number of a part is known, this list will identify the assembly in which the part is located.

CROSS INDEX-MFR. CODE NUMBER TO MANUFACTURER

The Mfr. Code Number to Manufacturer index for the Electrical Parts List is located immediately after this page. The Cross Index provides codes, names and addresses of manufacturers of components listed in the Electrical Parts List.

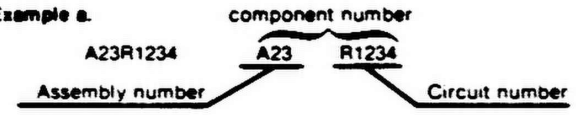
ABBREVIATIONS

Abbreviations conform to American National Standard Y1.1.

COMPONENT NUMBER (column one of the Electrical Parts List)

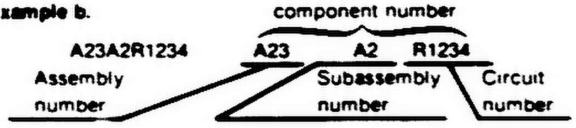
A numbering method has been used to identify assemblies, subassemblies and parts. Examples of this numbering method and typical expansions are illustrated by the following:

Example a.



Read: Resistor 1234 of Assembly 23

Example b.



Read: Resistor 1234 of Subassembly 2 of Assembly 23

Only the circuit number will appear on the diagrams and circuit board illustrations. Each diagram and circuit board illustration is clearly marked with the assembly number. Assembly numbers are also marked on the mechanical exploded views located in the Mechanical Parts List. The component number is obtained by adding the assembly number prefix to the circuit number.

The Electrical Parts List is divided and arranged by assemblies in numerical sequence (e.g. assembly A1 with its subassemblies and parts, precedes assembly A2 with its subassemblies and parts).

Chassis-mounted parts have no assembly number prefix and are located at the end of the Electrical Parts List.

TEKTRONIX PART NO. (column two of the Electrical Parts List)

Indicates part number to be used when ordering replacement part from Tektronix.

SERIAL/MODEL NO. (columns three and four of the Electrical Parts List)

Column three (3) indicates the serial number at which the part was first used. Column four (4) indicates the serial number at which the part was removed. No serial number entered indicates part is good for all serial numbers.

NAME & DESCRIPTION (column five of the Electrical Parts List)

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

MFR. CODE (column six of the Electrical Parts List)

Indicates the code number of the actual manufacturer of the part. (Code to name and address cross reference can be found immediately after this page.)

MFR. PART NUMBER (column seven of the Electrical Parts List)

Indicates actual manufacturers part number.

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
00779	AMP INC	P O BOX 3608	HARRISBURG PA 17105
00853	SANGAMO WESTON INC SANGAMO CAPACITOR DIV	SANGAMO RD P O BOX 128	PICKENS SC 29671
01121	ALLEN-BRADLEY CO	1201 SOUTH 2ND ST	MILWAUKEE WI 53204
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP	13500 N CENTRAL EXPRESSWAY P O BOX 225012 M/S 49	DALLAS TX 75265
02768	ILLINOIS TOOL WORKS INC FASTEX DIVISION	195 ALGONQUIN ROAD	DES PLAINES IL 60016
04222	AVX CERAMICS DIV OF AVX CORP	19TH AVE SOUTH P O BOX 867	MYRTLE BEACH SC 29577
04713	MOTOROLA INC SEMICONDUCTOR GROUP	5005 E MCDOWELL RD	PHOENIX AZ 85008
05397	UNION CARBIDE CORP MATERIALS SYSTEMS DIV	11901 MADISON AVE	CLEVELAND OH 44101
05828	GENERAL INSTRUMENT CORP GOVERNMENT SYSTEMS DIV	600 W JOHN ST	HICKSVILLE NY 11802
07263	FAIRCHILD CAMERA AND INSTRUMENT CORP SEMICONDUCTOR DIV	464 ELLIS ST	MOUNTAIN VIEW CA 94042
09922	BURNDY CORP	RICHARDS AVE	NORWALK CT 06852
11236	CTS OF BERNE INC	406 PARR ROAD	BERNE IN 46711
12969	UNITRODE CORP	580 PLEASANT ST	WATERTOWN MA 02172
18324	SIGNETICS CORP	811 E ARQUES	SUNNYVALE CA 94086
19701	MEPCO/ELECTRA INC A NORTH AMERICAN PHILIPS CO	P O BOX 760	MINERAL WELLS TX 76067
22526	DU PONT E I DE NEMOURS AND CO INC DU PONT CONNECTOR SYSTEMS DIV MILITARY PRODUCTS GROUP	515 FISHING CREEK RD	NEW CUMBERLAND PA 17070-3007
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR	SANTA CLARA CA 95051
32293	INTERSIL INC	10900 N TANTAU AVE	CUPERTINO CA 95014
34335	ADVANCED MICRO DEVICES	901 THOMPSON PL	SUNNYVALE CA 94086
53387	MINNESOTA MINING AND MFG CO ELECTRONIC PRODUCTS DIV	3M CENTER	ST PAUL MN 55101
54473	MATSUSHITA ELECTRIC CORP OF AMERICA	ONE PANASONIC WAY	SECAUCUS NJ 07094
57668	ROHM CORP	16931 MILLIKEN AVE	IRVINE CA 92713
58361	GENERAL INSTRUMENT CORP OPTOELECTRONICS DIV	3400 HILLVIEW AVE	PALO ALTO CA 94304
59821	CENTRALAB INC SUB NORTH AMERICAN PHILIPS CORP	7158 MERCHANT AVE	EL PASO TX 79915
76381	MINNESOTA MINING AND MFG CO	3M CENTER	ST PAUL MN 55101
80009	TEKTRONIX INC	4900 S W GRIFFITH DR P O BOX 500	BEAVERTON OR 97077
82389	SWITCHCRAFT INC SUB OF RAYTHEON CO	5555 N ELSTRON AVE	CHICAGO IL 60630
TK0935	MARQUARDT SWITCHES INC	MARQUARDT 67 ALBANY ST	CAZENOVIA NY 13035
TK0961	NEC ELECTRONICS USA INC	401 ELLIS ST	MOUNTAIN VIEW CA 94043
TK1016	TOSHIBA AMERICA INC ELECTRONIC COMPONENTS DIV BUSINESS SECTOR	2692 DOW AVE	TUSTIN CA 92680
TK1483	TEKA PRODUCTS INC	45 SALEM ST	PROVIDENCE RI 02907

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1	671-0056-00	B010100	B010303	CIRCUIT BD ASSY:CONTROLLER #2	80009	671-0056-00
A1	671-0056-01	B010304	B010556	CIRCUIT BD ASSY:CONTROLLER #2	80009	671-0056-01
A1	671-0056-02	B010557		CIRCUIT BD ASSY:CONTROLLER #2	80009	671-0056-02
A2	671-0046-00	B010100	B010296	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-00
A2	671-0046-01	B010297	B010303	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-01
A2	671-0046-02	B010304	B010455	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-02
A2	671-0046-03	B010456	B010529	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-03
A2	671-0046-04	B010530		CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-04
A3	671-0047-00			CIRCUIT BD ASSY:ANALYZER	80009	671-0047-00
A4	671-0055-00	B010100	B010253	CIRCUIT BD ASSY:KEYPAD	80009	671-0055-00
A4	671-0055-01	B010254		CIRCUIT BD ASSY:KEYPAD	80009	671-0055-01
A5	671-0208-00			CIRCUIT BOARD:RS232 INTERFACE (OPTION 01 ONLY)	80009	671-0208-00
A6	671-0151-00	B010100	B010375	CIRCUIT BD ASSY:PARALLEL PRINTER	80009	671-0151-00
A6	671-0151-01	B010376		CIRCUIT BD ASSY:PARALLEL PRINTER (OPTION 02 ONLY)	80009	671-0151-01
A11	671-0050-00			CIRCUIT BD ASSY:PROBE,16 CH TOP (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0050-00
A12	671-0051-00			CIRCUIT BD ASSY:PROBE,16 CH BOTTOM (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0051-00
A1	671-0056-00	B010100	B010303	CIRCUIT BD ASSY:CONTROLLER #2	80009	671-0056-00
A1	671-0056-01	B010304	B010556	CIRCUIT BD ASSY:CONTROLLER #2	80009	671-0056-01
A1	671-0056-02	B010557		CIRCUIT BD ASSY:CONTROLLER #2	80009	671-0056-02
A1BH1	146-0063-00			BATTERY,DRY:3V,150MAH,BUTTON CELL,LITHIUM	80009	146-0063-00
A1BH2	146-0063-00			BATTERY,DRY:3V,150MAH,BUTTON CELL,LITHIUM	80009	146-0063-00
A1C1	290-0748-00	B010100	B010556	CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-BIEV100S
A1C1	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C2	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C2	290-0525-00	B010557		CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C3	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C3	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C4	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C4	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C5	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C5	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C6	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C6	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C7	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C7	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C8	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C8	290-0525-00	B010557		CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C9	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C9	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C10	290-0525-00	B010100	B010556	CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C10	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C11	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C11	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C12	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C12	290-0748-00	B010557	B010556	CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-BIEV100S
A1C13	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C13	283-0159-00	B010557		CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C14	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C14	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C15	290-0525-00	B010100	B010556	CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A1C15	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C16	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1C16	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C17	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C17	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C18	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C18	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C19	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C19	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C20	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C20	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C21	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C21	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C22	283-0159-00	B010100	B010556	CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C22	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C23	283-0159-00			CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A1C24	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C24	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C25	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C25	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C26	283-0648-00	B010100	B010556	CAP,FXD,MICA DI:10PF,5%,500V	00853	D155C10000
A1C27	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C27	283-0648-00	B010557		CAP,FXD,MICA DI:10PF,5%,500V	00853	D155C10000
A1C28	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C28	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C29	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C29	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C30	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C30	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C31	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C31	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C32	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C32	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C33	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C33	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C34	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C34	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C35	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C35	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1C36	283-0024-00	B010100	B010556	CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A1C36	283-0421-00	B010557		CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A1D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D2	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D3	152-0574-00	B01 57		SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1D6	152-0574-00	B0 04	B010556	SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A1J1	131-4043-00			CONN,RCPT,ELEC:2 X 32,SOCKET	80009	131-4043-00
A1J2	131-3994-00			CONN,RCPT,ELEC:HEADER,1 X 6,MALE,0.1 SPACING W/LATCH	80009	131-3994-00
A1J3	131-3993-00			CONN,RCPT,ELEC:HEADER,1 X 10,MALE,0.1 SPACING W/LATCH	80009	131-3993-00
A1J4	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1J5	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1J6	131-3995-00			CONN,RCPT,ELEC:CKT BD,2 X 18,FEMALE	80009	131-3995-00
A1Q1	151-0188-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A1Q2	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A1Q3	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A1R1	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R2	315-0114-00			RES,FXD,FILM:110K OHM,5%,0.25W	19701	5043CX110K0J
A1R3	315-0395-00			RES,FXD,FILM:3.9M OHM,5%,0.25W	01121	CB3955
A1R4	315-0471-00	B010557		RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1R5	315-0102-00	B010557		RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R6	315-0103-00	B010100	B010121	RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R6	315-0473-00	B010122	B010162	RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A1R6	315-0683-00	B010163		RES,FXD,FILM:68K OHM,5%,0.25W	57668	NTR25J-E68K0
A1R7	315-0102-00	B010100	B010556	RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R8	315-0821-00			RES,FXD,FILM:820 OHM,5%,0.25W	19701	5043CX820R0J
A1R9	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R10	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R11	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A1R12	315-0182-00			RES,FXD,FILM:1.8K OHM,5%,0.25W	57668	NTR25J-E1K8
A1R13	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A1R14	315-0471-00	B010163	B010556	RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A1R14	311-2390-00	B010557		RES,VAR,NONWW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A1R15	315-0102-00	B010163	B010556	RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A1R16	315-0224-00	B010163	B010184	RES,FXD,FILM:220K OHM,5%,0.25W	57668	NTR25J-E220K
A1RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A1RP2	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A1RP3	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A1S1	307-1137-00	B010100	B010556	RES NTWK,FXD,FI:8,0.005 OHM,+150-50%,0.125W	00779	435704-8
A1S2	307-1365-00			RES NTWK,FXD,FI:0 OHM,14 PIN,PRGM SHUNT	80009	307-1365-00
A1U1	156-3068-00			MICROCKT,DGTL:CMOS,OCTAL D LATCH,W/3 STATE	80009	156-3068-00
A1U2	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A1U3	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A1U4	156-3066-00			MICROCKT,DGTL:CMOS,8 TO 1 SEL/MULTIPLEXER	80009	156-3066-00
A1U5	156-3066-00			MICROCKT,DGTL:CMOS,8 TO 1 SEL/MULTIPLEXER	80009	156-3066-00
A1U6	156-3061-00			MICROCKT,DGTL:CMOS,QUAD 2 INP,EXCL OR GATE	80009	156-3061-00
A1U7	156-3064-00			MICROCKT,DGTL:CMOS,8 BIT PRL-OUT	80009	156-3064-00
A1U8	156-2478-00			MICROCKT,DGTL:CMOS,CLOCK,DATE & TIME	32293	ICM7170CPG/IPG
A1U9	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U10	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A1U11	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A1U12	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A1U13	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A1U14	156-2879-00			MICROCKT,DGTL:DUAL 4 BIT DECADE & BIN CNTR	80009	156-2879-00
A1U15	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A1U16	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A1U17	160-4658-00	B010100	B010120	MICROCKT,DGTL:CMOS,32768 X 8 EPROM,PRGM	80009	160-4658-00
A1U17	160-4658-01	B010121		MICROCKT,DGTL:CMOS,32768 X 8 EPROM,PRGM	80009	160-4658-01
A1U19	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U20	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U21	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U22	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A1U23	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A1U24	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A1U25	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A1U26	156-3059-00			MICROCKT,DGTL:CMOS,8 INP NAND GATE	80009	156-3059-00
A1U27	156-2906-00			MICROCKT,DGTL:DUAL 4 BIT BINARY RIPPLE CNTR	18324	74HC393N
A1U28	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U29	156-2584-00			MICROCKT,DGTL:OCTAL D-TYPE FF W/CLEAR	01295	SN74C273N
A1U30	160-4659-00	B010100	B010120	MICROCKT,DGTL:CMOS,32768 X 8 EPROM,PRGM	80009	160-4659-00
A1U30	160-4659-01	B010121		MICROCKT,DGTL:CMOS,32768 X 8 EPROM,PRGM	80009	160-4659-01
A1U32	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U33	156-3051-00			MICROCKT,DGTL:CMOS,8 BIT MICRO PRC,2MHZ	80009	156-3051-00
A1U34	156-2773-00			MICROCKT,DGTL:CMOS,PRGM INTERVAL TIMER,8MZ	80009	156-2773-00
A1U35	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A1U36	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U37	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U41	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Descont	Name & Description	Mfr. Code	Mfr. Part No.
A1U42	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U43	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U44	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U45	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U46	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U47	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U48	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U49	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A1U50	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A1U51	156-2685-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE	80009	156-2685-00
A1U52	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A1VR1	311-2390-00	B010100	B010556	RES,VAR,NONWW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A1XS1	136-0729-00	B010100	B010556	SKT,PL-IN ELEK:MICROCKT,16 CONTACT	09922	DILB16P-108T
A1XS2	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A1XU17	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1XU18	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1XU30	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1XU31	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A1Y1	158-0333-00			XTAL UNIT,QTZ:32.768KHZ,0.002%,PARALLEL,N38	80009	158-0333-00
A1Y2	158-0332-00			XTAL UNIT,QTZ:25MHZ,0.002%,HC18O	80009	158-0332-00
A2	671-0046-00	B010100	B010296	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-00
A2	671-0046-01	B010297	B010303	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-01
A2	671-0046-02	B010304	B010455	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-02
A2	671-0046-03	B010456	B010529	CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-03
A2	671-0046-04	B010530		CIRCUIT BD ASSY:VIDEO KYBD	80009	671-0046-04
A2C1	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-B1EV100S
A2C2	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C3	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C4	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C5	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C6	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C7	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C8	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C9	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C10	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C11	283-0115-00			CAP,FXD,CER DI:47PF,5%,200V	59821	2D0T60K470J
A2C12	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C13	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C14	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C15	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C16	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C17	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C18	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C19	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C20	290-0525-00	B010100	B010303	CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A2C21	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C22	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C23	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C24	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C25	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C26	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C28	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C29	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C30	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C31	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C32	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C33	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C34	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2C35	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C36	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2C37	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A2D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A2D2	152-0066-00	B010530		SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A2D3	152-0066-00	B010530		SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A2D4	152-0066-00	B010530		SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A2J1	131-3358-00			CONN,RCPT,ELEC:HEADER,RTANG,10 PIN	53387	3591-5002
A2J2	131-4043-00			CONN,RCPT,ELEC:2 X 32,SOCKET	80009	131-4043-00
A2J3	131-4053-00			CONN,RCPT,ELEC:HEADER,1 X 6,MALE,RTANG,0.1 SPACING,W/LATCHES	80009	131-4053-00
A2Q1	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A2Q2	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A2R1	315-0105-00			RES,FXD,FILM:1M OHM,5%,0.25W	19701	5043CX1M000J
A2R2	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R3	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R4	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A2R5	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A2R6	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R7	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A2R8	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A2R9	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A2R10	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
A2R11	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R12	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R13	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R14	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A2R15	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R16	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R17	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2R18	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A2RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A2RP2	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A2RP3	307-0696-00			RES NTWK,FXD,FI:7,10K OHM,2%,0.15W EACH	01121	108A103
A2U1	156-3110-00			MICROCKT,DGTL:CMOS,OCTAL BUFFER	80009	156-3110-00
A2U2	156-3107-00			MICROCKT,DGTL:CMOS,OCTAL D-TYPE FLIP-FLOP	80009	156-3107-00
A2U3	156-3107-00			MICROCKT,DGTL:CMOS,OCTAL D-TYPE FLIP-FLOP	80009	156-3107-00
A2U4	156-3067-00			MICROCKT,DGTL:CMOS,4 BIT D TYPE REG	80009	156-3067-00
A2U5	156-2009-01			MICROCKT,DGTL:FLIP FLOP DUAL D 74HC74	04713	MC74HC74 N
A2U6	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A2U7	156-3063-00			MICROCKT,DGTL:CMOS,DUAL 1 TO 4 LINE DCDR	80009	156-3063-00
A2U8	156-3106-00			MICROCKT,DGTL:CMOS,14 STAGE BINARY RIPPLE	80009	156-3106-00
A2U9	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A2U10	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A2U11	156-2027-00			MICROCKT,DGTL:CMOS,HEX INVERTER	27014	MM74HC04N
A2U12	156-2707-00			MICROCKT,DGTL:QUAD 3 STATE BUFFER	80009	156-2707-00
A2U13	156-2906-00			MICROCKT,DGTL:DUAL 4 BIT BINARY RIPPLE CNTR	18324	74HC393N
A2U14	156-3105-00			MICROCKT,DGTL:TRIPLE 3-INPUT AND W/OC OUT	80009	156-3105-00
A2U15	156-2626-00			MICROCKT,DGTL:QUAD 2 INP POS NAND GATE	01295	74ALS03
A2U16	156-3138-00			MICROCKT,DGTL:CMOS,HEX D TYPE	80009	156-3138-00
A2U17	156-3104-00			MICROCKT,DGTL:QUAD 2 INPUT X NOR GATE W/OCT	80009	156-3104-00
A2U18	156-2463-00			MICROCKT,DGTL:HCMOS,QUAD 2-INPUT OR GATE	04713	MC74HC32ND
A2U19	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U20	156-2581-00			MICROCKT,DGTL:LSTTL,DUAL 4 CHAN MULTIPLEXER	80009	156-2581-00
A2U21	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N
A2U22	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N
A2U23	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N
A2U24	156-1958-00			MICROCKT,DGTL:QUAD 2 TO 1 LINE DATA SEL	04713	MC74HC157N

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2U25	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U26	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P
A2U27	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U28	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P
A2U29	156-3062-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3062-00
A2U30	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A2U31	156-3065-00			MICROCKT,DGTL:CMOS,8 BIT SR	80009	156-3065-00
A2U32	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A2U33	156-2583-00			MICROCKT,DGTL:3 TO 8 LN DECODER	01295	SN74HC138N
A2U34	156-2584-00			MICROCKT,DGTL:OCTAL D-TYPE FF W/CLEAR	01295	SN74C273N
A2U35	156-3107-00			MICROCKT,DGTL:CMOS,OCTAL D-TYPE FLIP-FLOP	80009	156-3107-00
A2U37	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A2U38	156-3065-00			MICROCKT,DGTL:CMOS,8 BIT SR	80009	156-3065-00
A2U39	156-3066-00			MICROCKT,DGTL:CMOS,8 TO 1 SEL/MULTIPLEXER	80009	156-3066-00
A2U40	156-3061-00			MICROCKT,DGTL:CMOS,QUAD 2 INP,EXCL OR GATE	80009	156-3061-00
A2U41	156-3051-00			MICROCKT,DGTL:CMOS,8 BIT MICRO PRC,2MHZ	80009	156-3051-00
A2U42	156-3109-00			MICROCKT,DGTL:CRT CONTROLLER	80009	156-3109-00
A2U43	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U44	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U45	160-4660-00			MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4660-00
A2U46	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U47	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U48	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U49	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U50	156-2483-00			MICROCKT,DGTL:CMOS,8192 X 8,150NS	TK0961	uPD4464C-15
A2U51	156-2605-00			MICROCKT,DGTL:HCMOS,ANALOG MUX,8 CHANNEL	80009	156-2605-00
A2U52	156-2421-00			MICROCKT,DGTL:QUAD D FLIP FLOP	04713	MC74HC175N
A2XU45	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A2Y1	158-0335-00			XTAL UNIT,QTZ:9.8304MHZ,0.005%,SERIES	80009	158-0335-00
A3	671-0047-00			CIRCUIT BD ASSY:ANALYZER	80009	671-0047-00
A3C1	283-0647-00			CAP,FXD,MICA DI:70PF,1%,100V	00853	D155E700F0
A3C2	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C3	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C4	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-B1EV100S
A3C5	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C6	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C7	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C8	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C9	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C10	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C11	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C12	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C13	283-0647-00			CAP,FXD,MICA DI:70PF,1%,100V	00853	D155E700F0
A3C14	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
				(C14 THRU C90)		
A3C90	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3C91	281-0785-00			CAP,FXD,CER DI:6BPF,10%,100V	04222	MA101A680KAA
A3D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A3D2	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A3D3	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A3J1	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A3J2	131-4043-00			CONN,RCPT,ELEC:2 X 32,SOCKET	80009	131-4043-00
A3J3	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A3J4	131-3181-00			CONN,RCPT,ELEC:HEADER,RTANG,2 X 20,0.1 CTR	22526	75867-007
A3J5	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A3J6	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3P1	311-2390-00			RES,VAR,NONW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A3P2	311-2390-00			RES,VAR,NONW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A3P3	311-2390-00			RES,VAR,NONW:TRMR,1K OHM,10%,0.25W	80009	311-2390-00
A3R1	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3R2	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A3R4	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3R5	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3R7	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3R10	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A3R11	315-0821-00			RES,FXD,FILM:820 OHM,5%,0.25W	19701	5043CX820R0J
A3RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A3RP2	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A3RP3	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A3U1	156-1743-00			MICROCKT,DGTL:ASTTL,QUAD 2-INPUT NOR GATE	18324	74F02 NB OR FB
A3U2	156-1743-00			MICROCKT,DGTL:ASTTL,QUAD 2-INPUT NOR GATE	18324	74F02 NB OR FB
A3U3	156-3054-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3054-00
A3U4	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U5	156-3070-00			MICROCKT,DGTL:CMOS,DUAL 4 INP NOR	80009	156-3070-00
A3U6	156-1832-00			MICROCKT,DGTL:3 INPUT NAND	01295	SN74ALS10A
A3U7	156-2091-00			MICROCKT,DGTL:QUAD 2-INP POS NAND GATES	01295	SN74ALS00AN3
A3U8	156-2851-00			MICROCKT,DGTL:HCMOS,DUAL J-K FF W/CLEAR	80009	156-2851-00
A3U9	156-3053-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3053-00
A3U10	156-2256-00			MICROCKT,DGTL:QUADRUPLE 2 INP POS NAND GATE	01295	SN74HC00N3/J4
A3U11	156-3060-00			MICROCKT,DGTL:CMOS,DUAL D FLIP-FLOP	80009	156-3060-00
A3U12	156-2096-00			MICROCKT,DGTL:OCTAL D-TYPE FLIP-FLOPS	01295	SN74ALS175N
A3U13	156-1756-00			MICROCKT,DGTL:DUAL D-TYPE POS-EDGE-TRIG FF	01295	SN74ALS74NP3/JP4
A3U14	156-2583-00			MICROCKT,DGTL:3 TO 8 UN DECODER	01295	SN74HC138N
A3U15	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U16	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U17	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U18	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U19	156-1993-00			MICROCKT,DGTL:2048 X 8 SRAM W/3 ST OUT	04713	MCM2016HN-70
A3U20	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U21	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U22	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U23	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U24	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U25	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U26	156-2093-00			MICROCKT,DGTL:QUAD 2-INP POSITIVE OR GATE	01295	SN74ALS32N3
A3U27	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U28	156-1746-00			MICROCKT,DGTL:ASTTL,8-INPUT MULTIPLXRS	07263	74F151 (PCQR)
A3U29	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U30	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U32	156-1832-00			MICROCKT,DGTL:3 INPUT NAND	01295	SN74ALS10A
A3U33	156-2113-00			MICROCKT,DI:QUAD 2-INPUT POSITIVE-AND GATE	01295	SN74ALS08N3
A3U34	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U35	156-1746-00			MICROCKT,DGTL:ASTTL,8-INPUT MULTIPLXRS	07263	74F151 (PCQR)
A3U36	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U37	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U38	156-2101-00			MICROCKT,DGTL:DUAL 4-INP POS NAND GATES	01295	SN74ALS20AN3

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3U38	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U39	156-2093-00			MICROCKT,DGTL:QUAD 2-INP POSITIVE OR GATE	01295	SN74ALS32N3
A3U40	156-1756-00			MICROCKT,DGTL:DUAL D-TYPE POS-EDGE-TRIG FF	01295	SN74ALS74NP3/JP4
A3U41	156-1752-00			MICROCKT,DGTL:TRIPLE 3-INPUT NAND GATE,SCRN	18324	74F10 (NB OR FB)
A3U42	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A3U43	156-2026-00			MICROCKT,DGTL:CMOS,QUAD 2 INPUT NOR GATE	04713	MC74HC02(N OR J)
A3U44	156-3053-00			MICROCKT,DGTL:CMOS,QUAD 2 INP NAND GATE	80009	156-3053-00
A3U45	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P
A3U46	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U47	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U48	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U49	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U50	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U51	156-1921-00			MICROCKT,DGTL:OCT BUS XCVR W/3 ST OUT	27014	MM74HCT245N
A3U52	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U53	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U54	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U55	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U56	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U57	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U58	156-2091-00			MICROCKT,DGTL:QUAD 2-INP POS NAND GATES	01295	SN74ALS00AN3
A3U59	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U60	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U61	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U62	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U63	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U64	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U65	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U66	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U67	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U68	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U69	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U70	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U71	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A3U72	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U73	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U74	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U75	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U76	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U77	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U78	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U79	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U80	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A3U81	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U82	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U83	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U84	156-2101-00			MICROCKT,DGTL:DUAL 4-INP POS NAND GATES	01295	SN74ALS20AN3

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3U85	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U86	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NOORJD)
A3U87	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U89	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U90	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U91	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U92	156-1800-00			MICROCKT,DGTL:ASTTL,QUAD 2 INP EXCL OR GATE	18324	N74F86(N8 OR J8)
A3U93	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U94	156-3069-00			MICROCKT,DGTL:CMOS,OCTAL D TYPE,FLIP-FLOP	80009	156-3069-00
A3U95	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U96	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U97	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U98	156-1664-00			MICROCKT,DGTL:SCREENED	01295	SN74ALS574(NP3)
A3U99	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NOORJD)
A3U100	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U101	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U102	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U103	156-2000-00			MICROCKT,DGTL:MOS,2048 X 8 BIT STATIC RAM	TK1016	TMM2018D-45
A3U104	156-2000-00			MICROCKT,DGTL:MOS,2048 X 8 BIT STATIC RAM	TK1016	TMM2018D-45
A3U105	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U106	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NOORJD)
A3U107	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U108	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U109	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U110	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U111	156-2098-00			MICROCKT,DGTL:SYNC 4-BIT COUNTERS	01295	SN74ALS161BN3
A3U112	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NOORJD)
A3U113	156-3091-00			MICROCKT,DGTL:FTTL,4 BIT MAGNITUDE CMPTR	80009	156-3091-00
A3U114	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3U115	156-3088-00			MICROCKT,DGTL:NMOS,SRAM,2048 X 8 W/THREE STATE OUTPUT	80009	156-3088-00
A3U116	156-2349-00			MICROCKT,DGTL:CMOS,8 BIT SHIFT REGISTER,SER IN/SER OR,PAR OUT W/3 STATE OUT	04713	MC74HC595NDS
A3XU11	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU41	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU42	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU44	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU71	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU74	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU77	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU92	136-0728-00			SKT,PL-IN ELEK:MICROCKT,14 CONTACT	09922	DILB14P-108
A3XU93	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A3XU94	136-0752-00			SKT,PL-IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P-108
A4	671-0055-00	B010100	B010253	CIRCUIT BD ASSY:KEYPAD	80009	671-0055-00
A4	671-0055-01	B010254		CIRCUIT BD ASSY:KEYPAD	80009	671-0055-01
A4C1	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A4C2	290-0956-00			CAP,FXD,ELCTLT:4.7UF,10%,35V	05397	T362B475K035AS
A4C3	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A4C4	290-0956-00			CAP,FXD,ELCTLT:4.7UF,10%,35V	05397	T362B475K035AS
A4C5	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A4C6	283-0220-02			CAP,FXD,CER DI:0.01UF,20%,50V	05397	C320C103M2R5CA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4C7	283-0220-02			CAP,FXD,CER DI:0.01UF,20%,50V	05397	C320C103M2R5CA
A4C8	290-0956-00			CAP,FXD,ELCTLT:4.7UF,10%,35V	05397	T362B475K035AS
A4D1	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A4D2	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A4LE1	150-1029-00			LT EMITTING DIO:GREEN,565NM,35MA (SCHEMATIC DESIGNATION LED1)	58361	Q6480/MV5274C
A4Q1	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A4Q2	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A4Q3	151-0302-00			TRANSISTOR:NPN,SI,TO-18	04713	ST899
A4R1	315-0114-00			RES,FXD,FILM:110K OHM,5%,0.25W	19701	5043CX110K0J
A4R2	315-0273-00			RES,FXD,FILM:27K OHM,5%,0.25W	57668	NTR25J-E27K0
A4R3	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A4R4	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A4R5	315-0114-00			RES,FXD,FILM:110K OHM,5%,0.25W	19701	5043CX110K0J
A4R6	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R7	317-0103-00	B010254		RES,FXD,CMPSN:10K OHM,5%,0125W	01121	BB1035
A4R8	317-0103-00	B010254		RES,FXD,CMPSN:10K OHM,5%,0125W	01121	BB1035
A4R9	317-0103-00	B010254		RES,FXD,CMPSN:10K OHM,5%,0125W	01121	BB1035
A4RP1	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A4RP2	307-0696-00			RES NTWK,FXD,FI:7,10K OHM,2%,0.15W EACH	01121	108A103
A4SW1	260-2359-00			SWITCH,PUSH:SPST,10MA,35VDC,MOMENTARY (QUANTITY OF 26)	80009	260-2359-00
A4U1	156-3078-00			MICROCKT,DGTL:CMOS,DEC TO BCD ENCODER	80009	156-3078-00
A4U2	156-3059-00			MICROCKT,DGTL:CMOS,8 INP NAND GATE	80009	156-3059-00
A4U3	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A4U4	156-2392-00			MICROCKT,DGTL:CMOS,HEX SCHMITT TRIG INV	04713	MC74HC14ND
A5	671-0208-00			CIRCUIT BOARD:RS232 INTERFACE (OPTION 01 ONLY)	80009	671-0208-00
A5C1	283-0159-00			CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A5C2	283-0159-00			CAP,FXD,CER DI:18PF,5%,50V	04222	SR155A180JAA
A5C3	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T3688475M050AS
A5C4	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T3688475M050AS
A5C5	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T3688475M050AS
A5C7	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C8	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C9	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C10	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C11	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C12	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C13	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C14	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5C15	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A5J1	131-1857-00			TERM SET,PIN:36/0.025 SQ PIN,ON 0.1 CTRS	TK1483	082-3643-SS10
A5J2	131-3435-00			CONN,RCPT,ELEC:HEADER,16 CONTACT,STRAIGHT	76381	3599-6002
A5J4	131-4096-00			CONN,RCPT,ELEC:CKT BD,2 X 18,0.1 SPACING	80009	131-4096-00
A5R1	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A5U1	156-3179-00			MICROCKT,DGTL:CMOS,USART	80009	156-3179-00
A5U2	156-0879-01			MICROCKT,DGTL:QUAD LINE DRIVER SCREENED	04713	MC1488LD
A5U3	156-0878-01			MICROCKT,DGTL:QUAD LINE RCVR,SCREENED	04713	MC1489LDS
A5U4	156-3180-00			MICROCKT,DGTL:CMOS,TRIPLE 3-INP NOR GATE	80009	156-3180-00
A5U5	160-4830-00	B010100	B010174	MICROCKT,DGTL:CMOS,8192 X 8 EPROM	80009	160-4830-00
A5U5	160-4830-01	B010175		MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4830-01
A5U6	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A5U7	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A5U8	156-2027-00			MICROCKT,DGTL:CMOS,HEX INVERTER	27014	MM74HC04N
A5XU5	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A5Y1	158-0290-00			XTAL UNIT,QTZ:1.8432MHZ,SERIES RES,HC-18U	80009	158-0290-00
A6	671-0151-00	B010100	B010375	CIRCUIT BD ASSY:PARALLEL PRINTER	80009	671-0151-00

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6	671-0151-01	B010376		CIRCUIT BD ASSY:PARALLEL PRINTER (OPTION 02 ONLY)	80009	671-0151-01
A6C1	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T3688475M050AS
A6C3	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C4	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C5	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C6	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C7	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6C8	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A6J1	131-4096-00			CONN,RCPT,ELEC:CKT BD,2 X 18,0.1 SPACING	80009	131-4096-00
A6J2	131-3362-00			CONN,RCPT,ELEC:HEADER,STR,26 PIN	53387	3593-6002
A6U1	156-2905-00			MICROCKT,DGTL:CMOS,PERIPHERAL INTFC	34335	TO BE ASSIGNED
A6U2	156-2582-00			MICROCKT,DGTL:CMOS,TRIPLE 3 INPUT OR GATE	TK1016	TC74HC4075P
A6U3	160-4662-00	B010100	B010128	MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4662-00
A6U3	160-4662-01	B010129	B010375	MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4662-01
A6U3	160-4662-02	B010376		MICROCKT,DGTL:CMOS,8192 X 8 EPROM,PRGM	80009	160-4662-02
A6U4	156-3055-00			MICROCKT,DGTL:CMOS,QUAD 2 INP AND GATE	80009	156-3055-00
A6U5	156-2415-00			MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS	80009	156-2415-00
A6U6	156-2027-00			MICROCKT,DGTL:CMOS,HEX INVERTER	27014	MM74HC04N
A6XU3	136-0755-00			SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
A11	671-0050-00			CIRCUIT BD ASSY:PROBE,16 CH TOP (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0050-00
A12	671-0051-00			CIRCUIT BD ASSY:PROBE,16 CH BOTTOM (PART OF 010-6442-00) (SUBPARTS NOT REPLACEABLE)	80009	671-0051-00
C100	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
F100	159-0277-00			FUSE,CARTRIDGE:5 X 20MM,3A,250V,5 SEC (STANDARD ONLY)	80009	159-0277-00
F100	159-0278-00			FUSE,CARTRIDGE:5 X 20MM,1.6A,250V,5 SEC (OPTIONS A1,A2,A3,A4,A5 ONLY)	80009	159-0278-00
J102	131-3997-00			CONN,RCPT,ELEC:PHONO TYPE,FEMALE	82389	3501-FP
J103	131-4044-00			CONN,RCPT,ELEC:PWR,MALE,250VAC,6A	80009	131-4044-00
PS110	119-2614-00			POWER SUPPLY:5V,6A,47-63HZ	80009	119-2614-00
R120	311-2391-00			RES,VAR,NONWW:TRMR,1K OHM,+20%,0.5W	80009	311-2391-00
S102	260-1967-00			SWITCH,SLIDE:DPDT 5A/250V 10A/125V MKD	TK0935	4021.0512
S103	260-2357-00			SWITCH,ROCKER:SPST,8A,125/250VAC,28VDC	02768	161-099-009
V001	119-2613-00			CRT DISPLAY AS:7 INCH CHASSIS TTL,P4	80009	119-2613-00

REPLACEABLE MECHANICAL PARTS

PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

FIGURE AND INDEX NUMBERS

Items in this section are referenced by figure and index numbers to the illustrations.

INDENTATION SYSTEM

This mechanical parts list is indented to indicate item relationships. Following is an example of the indentation system used in the description column.

1 2 3 4 5	*Name & Description*
	Assembly and/or Component
	Attaching parts for Assembly and/or Component
	****** END ATTACHING PARTS ******
	Detail Part of Assembly and/or Component
	Attaching parts for Detail Part
	****** END ATTACHING PARTS ******
	Parts of Detail Part
	Attaching parts for Parts of Detail Part
	****** END ATTACHING PARTS ******

Attaching Parts always appear in the same indentation as the item it mounts, while the detail parts are indented to the right. Indented items are part of, and included with, the next higher indentation. The separation symbol - - - * - - - indicates the end of attaching parts.

ABBREVIATIONS

"	INCH
#	NUMBER SIZE
ACTR	ACTUATOR
ADPTR	ADAPTER
ALIGN	ALIGNMENT
AL	ALUMINUM
ASSEM	ASSEMBLED
ASSY	ASSEMBLY
ATTEN	ATTENUATOR
AWG	AMERICAN WIRE GAGE
BD	BOARD
BRKT	BRACKET
BRS	BRASS
BRZ	BRONZE
BSHG	BUSHING
CAB	CABINET
CAP	CAPACITOR
CER	CERAMIC
CHAS	CHASSIS
CKT	CIRCUIT
COMP	COMPOSITION
CONN	CONNECTOR
COV	COVER
CPLG	COUPLING
CRT	CATHODE RAY TUBE
DEG	DEGREE
DWR	DRAWER
ELCTRN	ELECTRON
ELEC	ELECTRICAL
ELCTLT	ELECTROLYTIC
ELEM	ELEMENT
EPL	ELECTRICAL PARTS LIST
EQPT	EQUIPMENT
EXT	EXTERNAL
FIL	FILLISTER HEAD
FLEX	FLEXIBLE
FLH	FLAT HEAD
FLTR	FILTER
FR	FRAME or FRONT
FSTNR	FASTENER
FT	FOOT
FXD	FIXED
GSKT	GASKET
HDL	HANDLE
HEX	HEXAGON
HEX HD	HEXAGONAL HEAD
HEX SOC	HEXAGONAL SOCKET
HLCPS	HELICAL COMPRESSION
HLEXT	HELICAL EXTENSION
HV	HIGH VOLTAGE
IC	INTEGRATED CIRCUIT
ID	INSIDE DIAMETER
IDENT	IDENTIFICATION
IMPLR	IMPELLER
IN	INCH
INCAND	INCANDESCENT
INSUL	INSULATOR
INTL	INTERNAL
LPHLDR	LAMPHOLDER
MACH	MACHINE
MECH	MECHANICAL
MTG	MOUNTING
NIP	NIPPLE
NON WIRE	NOT WIRE WOUND
OBD	ORDER BY DESCRIPTION
OD	OUTSIDE DIAMETER
OVH	OVAL HEAD
PH BRZ	PHOSPHOR BRONZE
PL	PLAIN or PLATE
PLSTC	PLASTIC
PN	PART NUMBER
PNH	PAN HEAD
PWR	POWER
RCPT	RECEPTACLE
RES	RESISTOR
RGD	RIGID
RLF	RELIEF
RTNR	RETAINER
SCH	SOCKET HEAD
SCOPE	OSCILLOSCOPE
SCR	SCREW
SE	SINGLE END
SECT	SECTION
SEMICOND	SEMICONDUCTOR
SHLD	SHIELD
SHLDR	SHOULDERED
SKT	SOCKET
SL	SLIDE
SLFLKG	SELF-LOCKING
SLVG	SLEEVING
SPR	SPRING
SQ	SQUARE
SST	STAINLESS STEEL
STL	STEEL
SW	SWITCH
T	TUBE
TERM	TERMINAL
THD	THREAD
THK	THICK
TNSN	TENSION
TPG	TAPPING
TRH	TRUSS HEAD
V	VOLTAGE
VAR	VARIABLE
W	WITH
WSHR	WASHER
XFMR	TRANSFORMER
XSTR	TRANSISTOR

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
02768	ILLINOIS TOOL WORKS INC FASTEX DIVISION	195 ALGONQUIN ROAD	DES PLAINES IL 60016
06383	PANDUIT CORP	17301 RIDGELAND	TINLEY PARK IL 60477
06915	RICHCO PLASTIC CO	5825 N TRIPP AVE	CHICAGO IL 60646
12327	FREEWAY CORP	9301 ALLEN DR	CLEVELAND OH 44125
12697	CLAROSTAT MFG CO INC	LOWER WASHINGTON ST	DOVER NH 03820
16428	BELDEN CORP ELECTRONIC DIV	2200 US HWY 27 SOUTH P O BOX 1980	RICHMOND IN 47374
22526	DU PONT E I DE NEMOURS AND CO INC DU PONT CONNECTOR SYSTEMS DIV MILITARY PRODUCTS GROUP	515 FISHING CREEK RD	NEW CUMBERLAND PA 17070-3007
23499	HIGH VOLTAGE ENGINEERING CORP JUDD WIRE DIV	455 N QUINCE ST	ESCONDIDO CA 92025
24931	SPECIALTY CONNECTOR CO INC	2620 ENDRESS PLACE P O BOX D	GREENWOOD IN 46142
70903	BELDEN CORP	2000 S BATAVIA AVE	GENEVA IL 60134
71468	ITT CANNON ELECTRIC	10550 TALBERT PO BOX 8040	FOUNTAIN VALLEY CA 92728-8040
73743	FISCHER SPECIAL MFG CO	446 MORGAN ST	CINCINNATI OH 45206
77900	SHAKEPROOF DIV OF ILLINOIS TOOL WORKS	SAINT CHARLES RD	ELGIN IL 60120
78189	ILLINOIS TOOL WORKS INC SHAKEPROOF DIVISION	ST CHARLES ROAD	ELGIN IL 60120
80009	TEKTRONIX INC	4900 S W GRIFFITH DR P O BOX 500	BEAVERTON OR 97077
82389	SWITCHCRAFT INC SUB OF RAYTHEON CO	5555 N ELSTRON AVE	CHICAGO IL 60630
83385	MICRODOT MANUFACTURING INC GREER-CENTRAL DIV	3221 W BIG BEAVER RD	TROY MI 48098
83486	ELCO INDUSTRIES INC	1101 SAMUELSON RD	ROCKFORD IL 61101
S3109	FELLER ASA ADOLF AG C/O PANEL COMPONENTS CORP	355 TESCONI CIRCLE	SANTA ROSA CA 95401
TK0409	KEN R HUMKE CO	2211 NW NICOLAI	PORTLAND OR 97210
TK0435	LEWIS SCREW CO	4114 S PEORIA	CHICAGO IL 60609
TK0935	MARQUARDT SWITCHES INC	MARQUARDT 67 ALBANY ST	CAZENOVIA NY 13035
TK1373	PATELEC-CEM (ITALY)	10156 TORINO	VAICENTALLO 62/45S ITALY
TK1415	CABOT CORP E.A.R. DIV	7911 ZIONSVILLE RD	INDIANAPOLIS IN 46268
TK1473	RICHARD HIRSCHMANN OF AMERICA	PO BOX 229/INDUSTRIAL ROW	RIVERDALE NJ 07457

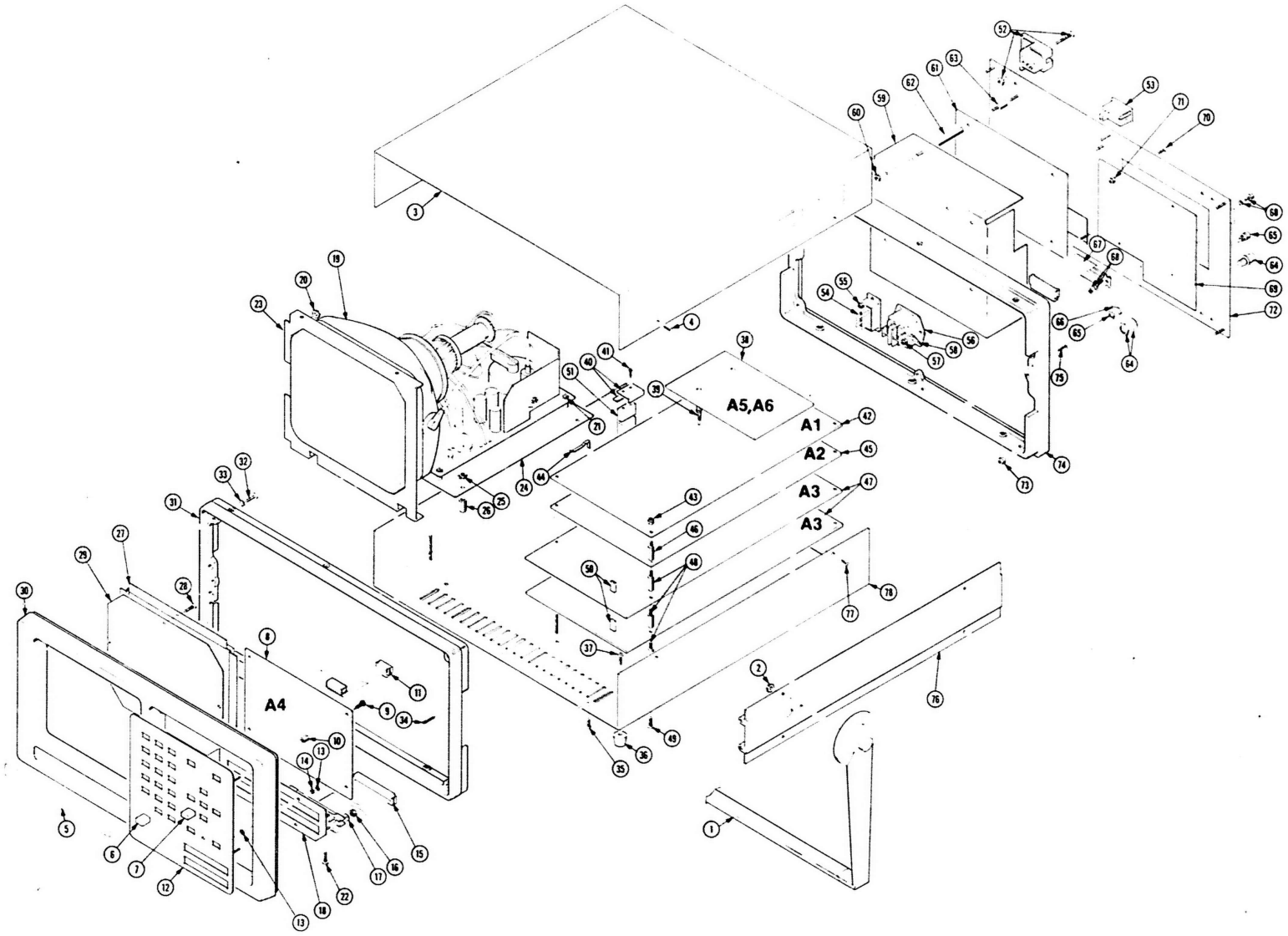
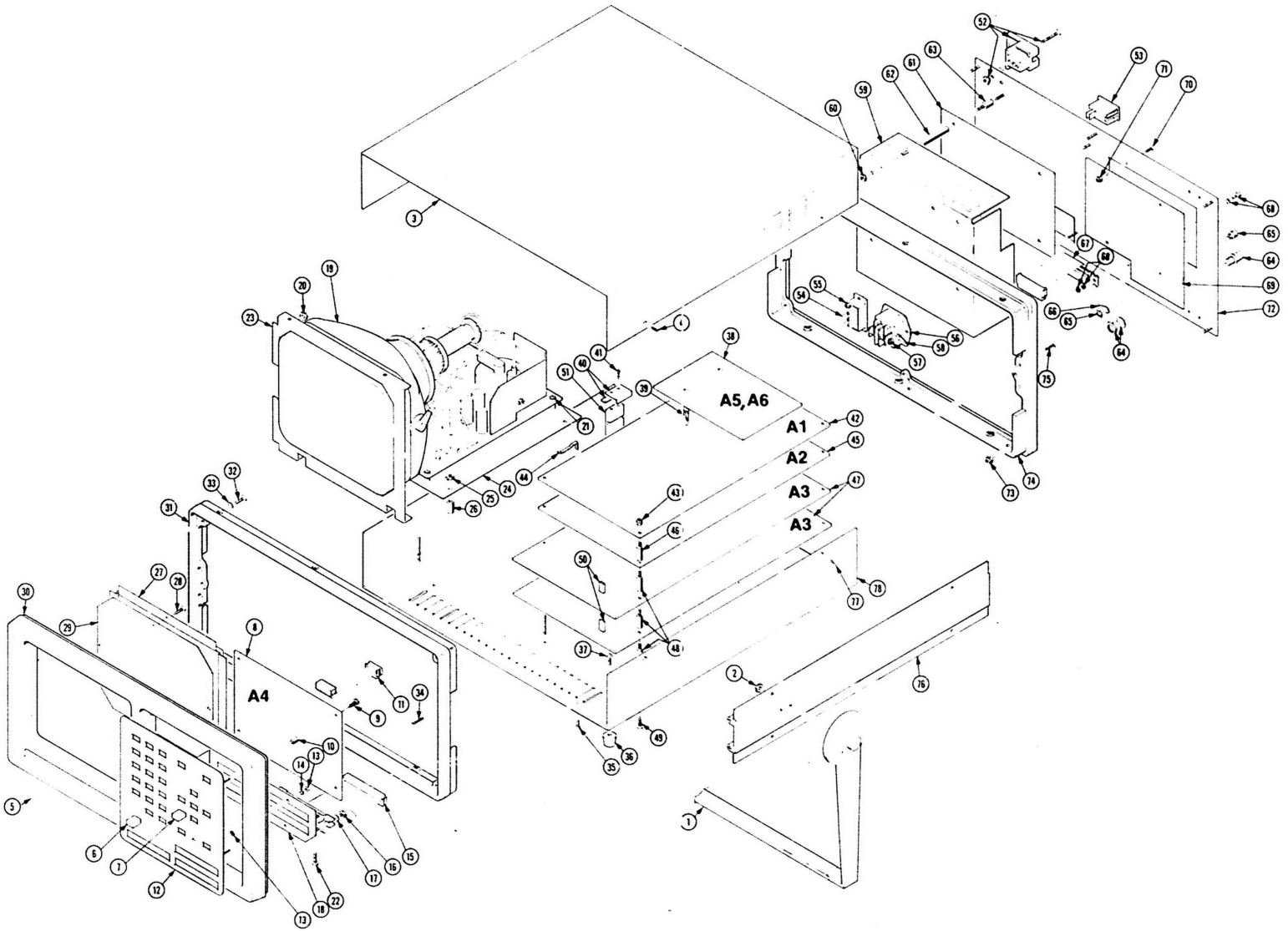


Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Descnt	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1-					1220		
-1	367-0383-00			1	HANDLE,CARRYING:	80009	367-0383-00
					(ATTACHING PARTS)		
-2	210-1441-00			2	NUT,PL,ASSEM WA:4MM X 7MM	80009	210-1441-00
					(END ATTACHING PARTS)		
-3	390-1018-00			1	CABINET,TOP:	80009	390-1018-00
					(ATTACHING PARTS)		
-4	211-0119-00			4	SCREW,MACHINE:4-40 X 0.25,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-5	334-6924-00			1	MARKER,IDENT:MKD TEKTRONIX,1220	80009	334-6924-00
-6	366-0666-00			21	PUSH BUTTON:IVORY GRAY,0.38 X 0.212	80009	366-0666-00
-7	366-0667-00			5	PUSH BUTTON:DOVE GRAY,0.38 X 0.212	80009	366-0667-00
-8	----- -----			1	CIRCUIT BD ASSY:KEYPAD		
					(SEE A4 REPL)		
					(ATTACHING PARTS)		
-9	211-0022-00			4	SCREW,MACHINE:2-56 X 0.188,PNH,STL	TK0435	ORDER BY DESCR
-10	129-0301-00	B010100	B010256	4	SPACER,POST:0.312 L,0.156 HEX	80009	129-0301-00
	129-0438-00	B010257		4	SPACER,POST:0.458 L,2-56 THRU,BRS,0.188 HEX	80009	129-0438-00
					(END ATTACHING PARTS)		
					CIRCUIT BD ASSY INCLUDES:		
-11	174-0754-00			1	.CA ASSY,SP,ELEC:10,28 AWG,6.0 L,RIBBON	80009	174-0754-00
-12	333-3481-00			1	PANEL,FRONT:	80009	333-3481-00
					(ATTACHING PARTS)		
-13	210-0405-00			2	NUT,PLAIN,HEX:2-56 X 0.188,BRS CD PL	73743	12157-50
-14	210-0001-00			2	WASHER,LOCK:#2 INTL,0.013 THK,STL	77900	1202-00-00-0541C
					(END ATTACHING PARTS)		
-15	174-0755-00			2	CA ASSY,SP,ELEC:40,28 AWG,6.0 L,RIBBON	80009	174-0755-00
					(ATTACHING PARTS)		
-16	210-0589-00			6	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF22NM40
-17	210-0801-00			4	WASHER,FLAT:0.14 ID X 0.281 OD X 0.25,BRS	12327	31724-000
					(END ATTACHING PARTS)		
-18	386-5573-00			1	PLATE,FRONT:PROBE CONNECTOR	80009	386-5573-00
-19	----- -----			1	CRT DISPLAY AS:7 INCH CHASSIS TTL,P4		
					(SEE V001 REPL)		
					(ATTACHING PARTS)		
-20	210-0457-00			4	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
-21	211-0510-00			4	SCREW,MACHINE:6-32 X 0.375,PNH,STL	83385	ORDER BY DESCR
-22	211-0504-00			4	SCREW,MACHINE:6-32 X 0.250,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-23	407-3612-00			1	BRACKET,SUPPORT:CRT,1220/25	80009	407-3612-00
	343-0549-00			1	STRAP,TIEDOWN,E:0.091 W X 4.0 L,ZYTEL	06383	PLT1M
-24	386-5579-00			1	PLATE,CRT MTG:	80009	386-5579-00
					(ATTACHING PARTS)		
-25	210-0457-00			4	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
					(END ATTACHING PARTS)		
-26	129-0908-00			4	SPACER,POST:2.069L,6-32 EXT/INT,AL,0.25HEX	80009	129-0908-00
-27	426-2201-00			1	FRAME,CRT:	80009	426-2201-00
					(ATTACHING PARTS)		
-28	211-0022-00			4	SCREW,MACHINE:2-56 X 0.188,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-29	378-0309-00			1	FILTER,CRT:	80009	378-0309-00
-30	426-2197-00			1	FRAME,PNL,CAB.:FRONT	80009	426-2197-00
-31	426-2198-00			1	FRAME,CABINET:	80009	426-2198-00
					(ATTACHING PARTS)		
-32	211-0510-00			5	SCREW,MACHINE:6-32 X 0.375,PNH,STL	83385	ORDER BY DESCR
-33	210-0006-00			5	WASHER,LOCK:#6 INTL,0.018 THK,STL	77900	1206-00-00-0541C
-34	213-0227-00			4	SCREW,TPG,TF:6-32 X 0.5,SPCL TYPE,FLH	83486	ORDER BY DESCR
-35	211-0025-00			6	SCREW,MACHINE:4-40 X 0.375,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-36	348-0080-01			4	FOOT,CABINET:CHARCOAL GRAY,POLYURETHANE	80009	348-0080-01
					(ATTACHING PARTS)		
-37	211-0510-00			4	SCREW,MACHINE:6-32 X 0.375,PNH,STL	83385	ORDER BY DESCR
					(END ATTACHING PARTS)		
-38	----- -----			1	CIRCUIT BOARD:RS232 INTERFACE		
					(OPTION 01 - SEE A5 REPL)		
	----- -----			1	CIRCUIT BD ASSY:PARALLEL PRINTER		

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1-					(OPTION 02 - SEE A6 REPL)		
-39	361-1251-00			2	.SPACER,CKT BD:0.5 NOM SPACING,SNAP IN,NYLON	06915	CBS-8M
-40	386-5586-00			1	SUPPORT,CKT BD:CLIP,0.75 X 0.65 X 0.2	80009	386-5586-00
					(ATTACHING PARTS)		
-41	213-0088-00			2	SCREW,TPG,TF:4-24 X 0.25,TYPE B,PNH,STL	83385	ORDER BY DESCR
					(END ATTACHING PARTS)		
-42	----- -----			1	CIRCUIT BD ASSY:CONTROLLER #2		
					(SEE A1 REPL)		
					(ATTACHING PARTS)		
-43	210-0589-00			4	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF22NM40
					(END ATTACHING PARTS)		
					CIRCUIT BD ASSY INCLUDES:		
-44	352-0843-00			2	.HOLDER,BATTERY:LITHIUM,3V,150MA	80009	352-0843-00
-45	----- -----			1	CIRCUIT BD ASSY:VIDEO KYBD		
					(SEE A2 REPL)		
					(ATTACHING PARTS)		
-46	129-1178-00			4	SPACER,POST:0.75 L,4-40 BOTH ENDS,AL	80009	129-1178-00
					(END ATTACHING PARTS)		
-47	----- -----			2	CIRCUIT BD ASSY:ANALYZER		
					(SEE A3 REPL)		
					(ATTACHING PARTS)		
-48	129-1178-00			12	SPACER,POST:0.75 L,4-40 BOTH ENDS,AL	80009	129-1178-00
-49	211-0097-00			4	SCREW,MACHINE:4-40 X 0.312,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
					CIRCUIT BD ASSY INCLUDES:		
-50	131-0993-00			28	.BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
-51	386-5584-00			1	SUPPORT,CKT BD:3.76 L,ABS	80009	386-5584-00
-52	348-0989-00			2	FOOT,CABINET:BLACK	80009	348-0989-00
-53	----- -----			1	SWITCH,ROCKER:SPST,8A,125/250VAC,28VDC		
					(SEE S103 REPL)		
-54	----- -----			1	SWITCH,SLIDE:DPDT 5A/250V 10A/125V MKD		
					(SEE S102 REPL)		
					(ATTACHING PARTS)		
-55	210-0589-00			2	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF22NM40
					(END ATTACHING PARTS)		
-56	131-4044-00			1	CONN,RCPT,ELEC:PWR,MALE,250VAC,6A	80009	131-4044-00
					(SEE J103 REPL)		
					(ATTACHING PARTS)		
-57	210-0589-00			2	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF22NM40
					(END ATTACHING PARTS)		
-58	196-3156-00			1	LEAD,ELECTRICAL:18 AWG,2.5 L,W/LUG,GREEN	80009	196-3156-00
-59	200-3420-00			1	COVER,PWR SPLY:	80009	200-3420-00
					(ATTACHING PARTS)		
-60	210-0457-00			4	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
					(END ATTACHING PARTS)		
-61	----- -----			1	POWER SUPPLY:5V,6A,47-63HZ		
					(SEE PS110 REPL)		
					(ATTACHING PARTS)		
-62	385-0070-00			4	SPACER,POST:0.5 L W/6-32 THD THRU,AL	80009	385-0070-00
					(END ATTACHING PARTS)		
-63	129-0458-00			4	SPACER,POST:0.467L,6-32 TAP/STUD,AL	80009	129-0458-00
-64	131-0106-00			2	CONN,RCPT,ELEC:BNC,FEMALE	24931	28JR158-1
-65	131-3997-00			1	CONN,RCPT,ELEC:PHONO TYPE,FEMALE	82389	3501-FP
-66	210-0207-00			1	TERMINAL,LUG:0.385 OD,PLAIN,BRS CD PL	12697	01136902
-67	174-0824-00			1	CA ASSY,SP ELEC:16,28 AWG,11.0 L,RIBBON	80009	174-0824-00
					(OPTION 01 ONLY)		
	174-0825-00			1	CA ASSY,SP ELEC:26,28 AWG,11.0 L,RIBBON	80009	174-0825-00
					(OPTION 02 ONLY)		
					(ATTACHING PARTS)		
-68	131-0890-00			2	LOCK,CONNECTOR:4-40 X 0.312 L HEX HD,STL	71468	D 20418-2
					(OPTION 01 AND 02 ONLY)		
					(END ATTACHING PARTS)		
-69	386-5572-00			1	PLATE,REAR:OPT COVER,1220/25	80009	386-5572-00
					(STANDARD ONLY)		
	386-5656-00			1	PLATE,REAR:OPT COVER 1220/25;01	80009	386-5656-00
					(OPTION 01 ONLY)		
	386-5657-00			1	PLATE,REAR:OPT COVER 1220/25;02	80009	386-5657-00
					(OPTION 02 ONLY)		

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1-	386-5655-00			1	PLATE,REAR:OPT COVER 1220/25;01/02 (OPTION 01 AND 02 ONLY)	80009	386-5655-00
					(ATTACHING PARTS)		
-70	211-0102-00			4	SCREW,MACHINE:4-40 X 0.5,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
-71	210-0589-00			4	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF22N440
					(END ATTACHING PARTS)		
-72	333-3492-00			1	PANEL,REAR:	80009	333-3492-00
					(ATTACHING PARTS)		
-73	210-0589-00			4	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF22N440
					(END ATTACHING PARTS)		
-74	426-2198-00			1	FRAME,CABINET:	80009	426-2198-00
					(ATTACHING PARTS)		
-75	213-0227-00			4	SCREW,TPG,TF:6-32 X 0.5,SPCL TYPE,FLH	83486	ORDER BY DESCR
					(END ATTACHING PARTS)		
-76	386-5574-00			2	RAIL,CABINET:	80009	386-5574-00
					(ATTACHING PARTS)		
-77	211-0119-00			4	SCREW,MACHINE:4-40 X 0.25,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-78	390-1017-00			1	CABINET,BOTTOM:	80009	390-1017-00
					WIRE ASSEMBLIES		
	174-0755-00			2	CA ASSY,SP,ELEC:40,28 AWG,6.0 L,RIBBON (CONNECTS FROM A3 TO PROBE A & B)	80009	174-0755-00
	174-0756-00			1	CA ASSY,SP,ELEC:5,24 AWG,7.0 L (CONNECTS FROM A2J2 TO BNC)	80009	174-0756-00
	174-0757-00			1	CA ASSY,SP,ELEC:10,22 AWG,6.0 L (CONNECTS FROM POWER SUPPLY TO A1J3)	80009	174-0757-00
	174-0758-00			1	CA ASSY,SP,ELEC:5,24 AWG,13.0 L (CONNECTS FROM CRT TO A2J)	80009	174-0758-00
	174-0765-00			1	CA ASSY,SP,ELEC:2,18 AWG,2.0 L (CONNECTS FROM SLIDE SWITCH TO POWER SUPPLY	80009	174-0765-00
	174-0766-00			1	CA ASSY,SP,ELEC:2,18 AWG,8.0 L (CONNECTS FROM ROCKER SWITCH TO FUSE)	80009	174-0766-00
	175-0675-00			1	WIRE,ELECTRICAL:STRD,18 AWG,300V RMS,BLACK (CONNECTS FROM PWR SPLY SWITCH TO FUSE)	23499	H0104047
	196-3155-00			1	LEAD,ELECTRICAL:18 AWG,4.0 L,5-4,W/LUG	80009	196-3155-00
	196-3156-00			1	LEAD,ELECTRICAL:18 AWG,2.5 L,W/LUG,GREEN	80009	196-3156-00
	174-1180-00	B010341		1	CA ASSY,SP,ELEC:1,23 AWG,5.75 L (CONNECTS FROM KEYPAD MOUNTING SCREW TO (CRT CHASSIS)	80009	174-1180-00

FIG. 2 EXPLODED VIEW
1225

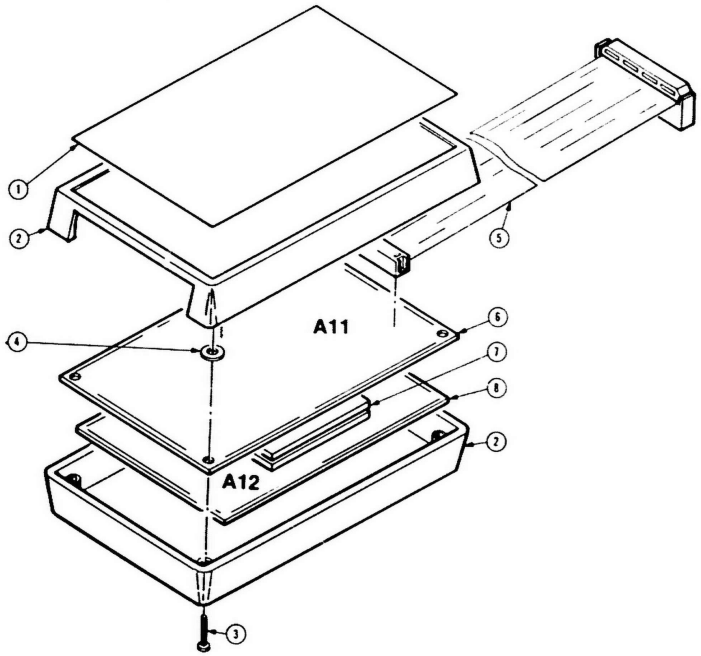


1225

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2-					1225		
-1	367-0383-00			1	HANDLE,CARRYING: (ATTACHING PARTS)	80009	367-0383-00
-2	210-1441-00			2	NUT,PL,ASSEM WA:4MM X 7MM (END ATTACHING PARTS)	80009	210-1441-00
-3	390-1018-00			1	CABINET,TOP: (ATTACHING PARTS)	80009	390-1018-00
-4	211-0119-00			4	SCREW,MACHINE:4-40 X 0.25,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESCR
-5	334-6925-00			1	MARKER,IDENT:MKD TEKTRONIX,1225	80009	334-6925-00
-6	366-0666-00			21	PUSH BUTTON:IVORY GRAY,0.38 X 0.212	80009	366-0666-00
-7	366-0667-00			5	PUSH BUTTON:DOVE GRAY,0.38 X 0.212	80009	366-0667-00
-8	----- -----			1	CIRCUIT BD ASSY:KEYPAD (SEE A4 REPL) (ATTACHING PARTS)		
-9	211-0022-00			4	SCREW,MACHINE:2-56 X 0.188,PNH,STL	TK0435	ORDER BY DESCR
-10	129-0301-00	B010100	B010425	4	SPACER,POST:0.312 L,0.156 HEX	80009	129-0301-00
	129-0438-00	B010426		4	SPACER,POST:0.458 L,2-56 THRU,BRS,0.188 HEX (END ATTACHING PARTS)	80009	129-0438-00
					CIRCUIT BD ASSY INCLUDES:		
-11	174-0754-00			1	.CA ASSY,SP,ELEC:10,28 AWG,6.0 L,RIBBON	80009	174-0754-00
-12	333-3482-00			1	PANEL,FRONT: (ATTACHING PARTS)	80009	333-3482-00
-13	210-0405-00			2	NUT,PLAIN,HEX:2-56 X 0.188,BRS CD PL	73743	12157-50
-14	210-0001-00			2	WASHER,LOCK:#2 INTL,0.013 THK,STL (END ATTACHING PARTS)	77900	1202-00-00-0541C
-15	174-0755-00			3	CA ASSY,SP,ELEC:40,28 AWG,6.0 L,RIBBON (ATTACHING PARTS)	80009	174-0755-00
-16	210-0589-00			6	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF22N440
-17	210-0801-00			5	WASHER,FLAT:0.14 ID X 0.281 OD X 0.25,BRS (END ATTACHING PARTS)	12327	31724-000
-18	386-5573-00			1	PLATE,FRONT:PROBE CONNECTOR	80009	386-5573-00
-19	----- -----			1	CRT DISPLAY AS:7 INCH CHASSIS TTL,P4 (SEE V001 REPL) (ATTACHING PARTS)		
-20	210-0457-00			4	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
-21	211-0510-00			4	SCREW,MACHINE:6-32 X 0.375,PNH,STL	83385	ORDER BY DESCR
-22	211-0504-00			4	SCREW,MACHINE:6-32 X 0.250,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESCR
-23	407-3612-00			1	BRACKET,SUPPORT:CRT,1220/25	80009	407-3612-00
	343-0549-00			1	STRAP,TIEDOWN,E:0.091 W X 4.0 L,ZYTEL	06383	PLT1M
-24	386-5579-00			1	PLATE,CRT MTG: (ATTACHING PARTS)	80009	386-5579-00
-25	210-0457-00			4	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL (END ATTACHING PARTS)	78189	511-061800-00
-26	129-0908-00			4	SPACER,POST:2.069L,6-32 EXT/INT,AL,0.25HEX	80009	129-0908-00
-27	426-2201-00			1	FRAME,CRT: (ATTACHING PARTS)	80009	426-2201-00
-28	211-0022-00			4	SCREW,MACHINE:2-56 X 0.188,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESCR
-29	378-0309-00			1	FILTER,CRT:	80009	378-0309-00
-30	426-2197-00			1	FRAME,PNL,CAB.:FRONT	80009	426-2197-00
-31	426-2198-00			1	FRAME,CABINET: (ATTACHING PARTS)	80009	426-2198-00
-32	211-0510-00			5	SCREW,MACHINE:6-32 X 0.375,PNH,STL	83385	ORDER BY DESCR
-33	210-0006-00			5	WASHER,LOCK:#6 INTL,0.018 THK,STL	77900	1206-00-00-0541C
-34	213-0227-00			4	SCREW,TP6,TF:6-32 X 0.5,SPCL TYPE,FLH	83486	ORDER BY DESCR
-35	211-0025-00			6	SCREW,MACHINE:4-40 X 0.375,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESCR
-36	348-0080-01			4	FOOT,CABINET:CHARCOAL GRAY,POLYURETHANE (ATTACHING PARTS)	80009	348-0080-01
-37	211-0510-00			4	SCREW,MACHINE:6-32 X 0.375,PNH,STL (END ATTACHING PARTS)	83385	ORDER BY DESCR
-38	----- -----			1	CIRCUIT BOARD:RS232 INTERFACE (OPTION 01 - SEE A5 REPL)		
	----- -----			1	CIRCUIT BD ASSY:PARALLEL PRINTER		

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2-					(OPTION 02 - SEE A6 REPL)		
-39	361-1251-00			2	.SPACER,CKT BD:0.5 NOM SPACING,SNAP IN,NYLON	08915	CBS-8M
-40	386-5586-00			1	SUPPORT,CKT BD:CLIP,0.75 X 0.65 X 0.2	80009	386-5586-00
					(ATTACHING PARTS)		
-41	213-0088-00			2	SCREW,TPG,TF:4-24 X 0.25,TYPE B,PNH,STL	83385	ORDER BY DESCR
					(END ATTACHING PARTS)		
-42	----- -----			1	CIRCUIT BD ASSY:CONTROLLER #2		
					(SEE A1 REPL)		
					(ATTACHING PARTS)		
-43	210-0589-00			4	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF220440
					(END ATTACHING PARTS)		
					CIRCUIT BD ASSY INCLUDES:		
-44	352-0843-00			2	.HOLDER,BATTERY:LITHIUM,3V,150MA	80009	352-0843-00
-45	----- -----			1	CIRCUIT BD ASSY:VIDEO KYBD		
					(SEE A2 REPL)		
					(ATTACHING PARTS)		
-46	129-1178-00			4	SPACER,POST:0.75 L,4-40 BOTH ENDS,AL	80009	129-1178-00
					(END ATTACHING PARTS)		
-47	----- -----			3	CIRCUIT BD ASSY:ANALYZER		
					(SEE A3 REPL)		
					(ATTACHING PARTS)		
-48	129-1178-00			16	SPACER,POST:0.75 L,4-40 BOTH ENDS,AL	80009	129-1178-00
-49	211-0097-00			4	SCREW,MACHINE:4-40 X 0.312,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
					CIRCUIT BD ASSY INCLUDES:		
-50	131-0993-00			28	.BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
-51	386-5585-00			1	SUPPORT,CKT BD:4.575 L,ABS	80009	386-5585-00
-52	348-0989-00			2	FOOT,CABINET:BLACK	80009	348-0989-00
-53	----- -----			1	SWITCH,ROCKER:SPST,8A,125/250VAC,28VDC		
					(SEE S103 REPL)		
-54	----- -----			1	SWITCH,SLIDE:DPDT 5A/250V 10A/125V MKD		
					(SEE S102 REPL)		
					(ATTACHING PARTS)		
-55	210-0589-00			2	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF220440
					(END ATTACHING PARTS)		
-56	----- -----			1	CONN,RCPT,ELEC:PWR,MALE,250VAC,6A		
					(SEE J103 REPL)		
					(ATTACHING PARTS)		
-57	210-0589-00			2	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF220440
					(END ATTACHING PARTS)		
-58	196-3156-00			1	LEAD,ELECTRICAL:18 AWG,2.5 L,W/LUG,GREEN	80009	196-3156-00
-59	200-3420-00			1	COVER,PWR SPLY:	80009	200-3420-00
					(ATTACHING PARTS)		
-60	210-0457-00			4	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
					(END ATTACHING PARTS)		
-61	----- -----			1	POWER SUPPLY:5V,6A,47-63HZ		
					(SEE PS110 REPL)		
					(ATTACHING PARTS)		
-62	385-0070-00			4	SPACER,POST:0.5 L W/6-32 THD THRU,AL	80009	385-0070-00
					(END ATTACHING PARTS)		
-63	129-0458-00			4	SPACER,POST:0.487L,6-32 TAP/STUD,AL	80009	129-0458-00
-64	131-0106-00			2	CONN,RCPT,ELEC:BNC,FEMALE	24931	28JR158-1
-65	131-3997-00			1	CONN,RCPT,ELEC:PHONO TYPE,FEMALE	82389	3501-FP
-66	210-0207-00			1	TERMINAL,LUG:0.385 OD,PLAIN,BRS CD PL	12697	01136902
-67	174-0824-00			1	CA ASSY,SP ELEC:16,28 AWG,11.0 L,RIBBON	80009	174-0824-00
					(OPTION 01 ONLY)		
	174-0825-00			1	CA ASSY,SP ELEC:26,28 AWG,11.0 L,RIBBON	80009	174-0825-00
					(OPTION 02 ONLY)		
					(ATTACHING PARTS)		
-68	131-0890-00			2	LOCK,CONNECTOR:4-40 X 0.312 L HEX HD,STL	71468	D 20418-2
					(OPTION 01 AND 02 ONLY)		
					(END ATTACHING PARTS)		
-69	386-5572-00			1	PLATE,REAR:OPT COVER,1220/25	80009	386-5572-00
					(STANDARD ONLY)		
	386-5656-00			1	PLATE,REAR:OPT COVER 1220/25;01	80009	386-5656-00
					(OPTION 01 ONLY)		
	386-5657-00			1	PLATE,REAR:OPT COVER 1220/25;02	80009	386-5657-00
					(OPTION 02 ONLY)		

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2-	386-5655-00			1	PLATE,REAR:OPT COVER 1220/25;01/02 (OPTION 01 AND 02 ONLY)	80009	386-5655-00
					(ATTACHING PARTS)		
-70	211-0102-00			4	SCREW,MACHINE:4-40 X 0.5,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
-71	210-0589-00			4	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF220N40
					(END ATTACHING PARTS)		
-72	333-3492-00			1	PANEL,REAR:	80009	333-3492-00
					(ATTACHING PARTS)		
-73	210-0589-00			4	NUT,SLFLKG,HEX:4-40 X 0.246,STL CD PL	TK0409	CF220N40
					(END ATTACHING PARTS)		
-74	426-2198-00			1	FRAME,CABINET:	80009	426-2198-00
					(ATTACHING PARTS)		
-75	213-0227-00			4	SCREW,TPG,TF:6-32 X 0.5,SPCL TYPE,FLH	83486	ORDER BY DESCR
					(END ATTACHING PARTS)		
-76	386-5574-00			2	RAIL,CABINET:	80009	386-5574-00
					(ATTACHING PARTS)		
-77	211-0119-00			4	SCREW,MACHINE:4-40 X 0.25,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-78	390-1017-00			1	CABINET,BOTTOM:	80009	390-1017-00
					WIRE ASSEMBLIES		
	174-0755-00			3	CA ASSY,SP,ELEC:40,28 AWG,6.0 L,RIBBON	80009	174-0755-00
					(CONNECTS FROM A3 TO PROBE A & B)		
	174-0756-00			1	CA ASSY,SP,ELEC:5,24 AWG,7.0 L	80009	174-0756-00
					(CONNECTS FROM A2J2 TO BNC)		
	174-0757-00			1	CA ASSY,SP,ELEC:10,22 AWG,6.0 L	80009	174-0757-00
					(CONNECTS FROM POWER SUPPLY TO A1J3)		
	174-0758-00			1	CA ASSY,SP,ELEC:5,24 AWG,13.0 L	80009	174-0758-00
					(CONNECTS FROM CRT TO A2J)		
	174-0765-00			1	CA ASSY,SP,ELEC:2,18 AWG,2.0 L	80009	174-0765-00
					(CONNECTS FROM SLIDE SWITCH TO POWER SUPPLY		
	174-0766-00			1	CA ASSY,SP,ELEC:2,18 AWG,8.0 L	80009	174-0766-00
					(CONNECTS FROM ROCKER SWITCH TO FUSE)		
	175-0675-00			1	WIRE,ELECTRICAL:STRD,18 AWG,300V RWS,BLACK	23499	H0104047
					(CONNECTS FROM PWR SPLY SWITCH TO FUSE)		
	196-3155-00			1	LEAD,ELECTRICAL:18 AWG,4.0 L,5-4,W/LUG	80009	196-3155-00
	196-3156-00			1	LEAD,ELECTRICAL:18 AWG,2.5 L,W/LUG,GREEN	80009	196-3156-00
	174-1180-00	B010530		1	CA ASSY,SP,ELEC:1,23 AWG,5.75 L	80009	174-1180-00
					(CONNECTS FROM KEYPAD MOUNTING SCREW TO		
					(CRT CHASSIS)		



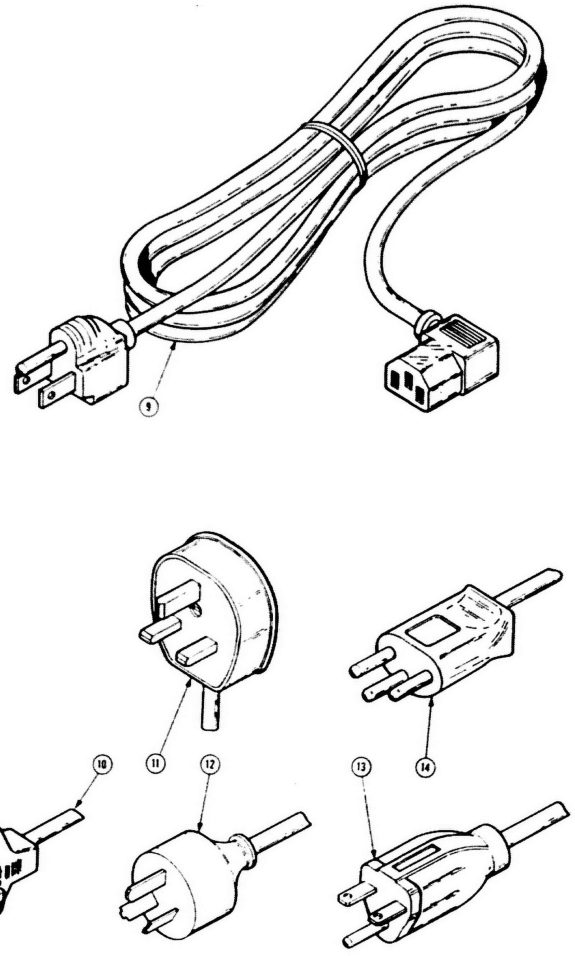


FIG. 3 ACCESSORIES

1220/1225

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Serial/Assembly No. Dscont	Qty	12345	Name & Description	Mfr. Code	Mfr. Part No.
3-						STANDARD ACCESSORIES		
	----- -----			1		16 CH PROBE:16 CH TTL/CMOS PROBE		
-1	334-8926-00			1		.MARKER,IDENT:MKD TEKTRONIX,P6442 16 CHAN	80009	334-8926-00
-2	380-0851-02			1		.HOUSING,PROBE:P6442,MILLED	80009	380-0851-02
-3	----- -----			4		..(PART INCLUDED WITH HOUSING,PROBE)		
-4	210-1442-00			4		.WASHER,FLAT:0.188 ID X 0.375 OD X 0.062	80009	210-1442-00
-5	174-0753-00			1		.CA ASSY,SP,ELEC:40,28 AWG,30.0 L,RIBBON	80009	174-0753-00
-6	----- -----			1		.CIRCUIT BD ASSY:PROBE,16 CH TOP .(SEE A11 REPL)		
-7	348-0390-00			2		.CUSHION,PROBE:1.5 X 2.0 X 0.125,PVC ALLOY	TK1415	ORDER BY DESCR
-8	----- -----			1		.CIRCUIT BD ASSY:PROBE,16 CH BOTTOM .(SEE A12 REPL)		
-9	161-0104-00			1		CABLE ASSY,PWR,:3 WIRE,98.0 L,W/RTANG CONN (STANDARD ONLY)	16428	CHB352, FH-8352
-10	161-0104-06			1		CABLE ASSY,PWR,:3 X 0.75MM SQ,220V,98.0 L (OPTION A1 - EUROPEAN)	S3109	ORDER BY DESCR
-11	161-0104-07			1		CABLE ASSY,PWR,:3 X 0.75MM SQ,240V,98.0 L (OPTION A2 - UNITED KINGDOM)	TK1373	A25UK-RA
-12	161-0104-05			1		CABLE ASSY,PWR,:3,18 AWG,240V,98.0 L (OPTION A3 - AUSTRALIAN)	S3109	ORDER BY DESCR
-13	161-0104-08			1		CABLE ASSY,PWR,:3,18 AWG,240V,98.0 L (OPTION A4 - NORTH AMERICAN)	70903	ORDER BY DESCR
-14	161-0154-00			1		CABLE ASSY,PWR,:3,0.75MM SQ,240V,6A,2.5M L (OPTION A5 - SWISS)	S3109	86515000
	013-0217-00			48		GRABBER,IC LEAD:BLACK,2.047 L X 0.137 DIA (1220 ONLY)	TK1473	973 592 500
	013-0217-00			72		GRABBER,IC LEAD:BLACK,2.047 L X 0.137 DIA (1225 ONLY)	TK1473	973 592 500
	016-0900-00			1		MANUAL MATERIAL:1220/25/05,BINDER	80009	016-0900-00
	062-9279-00			1		MANUAL,TECH:OPERATORS,1220/1225	80009	062-9279-00
	070-6438-00			1		MANUAL,TECH:OPERATORS,1220/25	80009	070-6438-00
	174-0752-00			2		CA ASSY,SP,ELEC:10,28 AWG,RIBBON (1220 ONLY)	80009	174-0752-00
	174-0752-00			3		CA ASSY,SP,ELEC:10,28 AWG,RIBBON (1225 ONLY)	80009	174-0752-00
	174-0763-00			1		CA ASSY,SP,ELEC:10,28 AWG,11.0 L	80009	174-0763-00
	174-0764-00			1		CA ASSY,SP,ELEC:10 28 AWG,11.0 L	80009	174-0764-00
	671-0049-00			1		CIRCUIT BD ASSY:TEST	80009	671-0049-00

MANUAL CHANGE INFORMATION

At Tektronix, we continually strive to keep up with latest electronic developments by adding circuit and component improvements to our instruments as soon as they are developed and tested.

Sometimes, due to printing and shipping requirements, we can't get these changes immediately into printed manuals. Hence, your manual may contain new change information on following pages.

A single change may affect several sections. Since the change information sheets are carried in the manual until all changes are permanently entered, some duplication may occur. If no such change pages appear following this page, your manual is correct as printed.

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MANUAL CHANGE INFORMATION

Date: 12/8/87 Change Reference: C1/1287

Product: 1220/1225 Service Manual Manual Part No.: 061-3473-00

DESCRIPTION Product Group 43

Add the attached schematics to Section 6: Diagrams and Circuit Board Illustrations.